



Edd Clark & Associates, Inc.

Environmental Consultants

August 31, 2006

**Job No.: 0108,001.93**

Mr. Bruce Raven  
4550 Spring Hill Road  
Petaluma, CA 94952

**Groundwater Monitoring Report - May 2006 Event  
C&R Ranches  
4550 Spring Hill Road  
Petaluma, California**

Dear Mr. Raven:

Please accept this as Edd Clark & Associates, Inc.'s (EC&A's) report on May 2006 groundwater monitoring at C&R Ranches, 4550 Spring Hill Road (site) in Petaluma, California (Figure 1). Groundwater monitoring is being conducted at the site at the request of the County of Sonoma Department of Health Services (CSDHS) because of a release of fuel hydrocarbons (FHCs) to the subsurface in the location of the former underground storage tanks (USTs). Groundwater monitoring activities completed for this event were responsive to the CSDHS August 27, 2003 letter, which approved removal of MW-1 and onsite water-supply wells W-1 and W-2 from the sampling program, annual sampling of MW-2 at seasonally high water-table levels, and semi-annual sampling of MW-3 through MW-10 at seasonally high and low water-table levels.

The scope of work for the May 2006 groundwater monitoring event included measuring depth to water (DTW) in MW-2 through MW-10; collecting groundwater samples from MW-2 through MW-10 for laboratory analyses (Figure 2); calculating groundwater-flow direction and gradient; evaluating the results of the analyses and calculations; and preparing this report. Additionally, because an ozone microsparging system is planned to be installed at the site, dissolved oxygen (DO) and oxidation-reduction potential (ORP) were measured in MW-2 through MW-10 and groundwater samples from MW-2 through MW-5 were analyzed for ORP-sensitive chemicals to establish pre-ozone microsparging baseline measurements. These ozone microsparging groundwater parameters were required by the CSDHS in their November 30, 2005 letter. A copy of this report will be submitted to the CSDHS for their review and to the State GeoTracker Internet Database.

#### **Water-level Measurements**

On May 8, 2006, EC&A personnel measured groundwater levels in monitoring wells MW-2 through MW-10. DTW below the top of well casing (TOC) in each well was measured to the nearest 0.01 foot (ft) with a water-level meter. The meter was cleaned and rinsed prior to taking measurements in each well. DTW measurements were recorded after the well caps were removed and groundwater in the wells was allowed to equilibrate for a minimum of 15 minutes. DTW in MW-2 through MW-10 ranged from 3.83 ft to 5.40 ft, and the calculated groundwater-flow direction and gradient

in the vicinity of the former USTs location were S62°W and 0.10 ft/ft, respectively (Table 1 and Figure 3).

Groundwater Field Logs containing DTW measurements are in Appendix A. DTW data will be electronically submitted to the State GeoTracker Internet Database.

### **Groundwater Sampling**

On May 8, 2006, EC&A personnel collected groundwater samples from MW-2 and MW-5 through MW-10. Groundwater samples were collected from MW-3 and MW-4 on May 9, 2006. Prior to collecting samples, the monitoring wells were purged with a submersible pump and the purged water was checked for the presence of free-floating product. Free-floating product was not detected in the purged water; however, an odor of FHCs was detected in water purged from MW-3 and MW-4. Groundwater temperature, pH, electric conductivity, ORP and DO were measured during purging of the wells at intervals of approximately one well-casing volume. Groundwater samples were collected from the monitoring wells after groundwater parameters stabilized and the water level returned to a minimum of 80% of the initially recorded water level. Purge volumes and water-quality parameters are recorded on the Groundwater Field Logs in Appendix A.

Groundwater samples were collected in new single-sample, disposable bailers fitted with disposable, bottom-emptying devices to minimize water degassing. The samples were transferred from the bailers to properly labeled, laboratory-supplied sterile sample containers, placed on ice and transported under chain-of-custody control to McCampbell Analytical, Inc. (MAI) for the required chemical analyses. MAI is a state-certified laboratory in Pittsburg, California.

### **Decontamination Procedures**

Sampling equipment was cleaned onsite with a low-phosphorous, soap-and-water solution and double rinsed in tap water. Decontamination water and monitoring well purge water were placed in properly labeled, DOT 17H 55-gallon drums for temporary, onsite storage.

### **Groundwater Sample Analyses and Results**

Groundwater samples collected from MW-2 through MW-10 were analyzed for total petroleum hydrocarbons (TPH) as gasoline (g), TPH as diesel (d) and benzene, toluene, ethylbenzene and xylenes (BTEX) by Analytical Methods SW8015Cm/8015C/8021B, and for methyl tert-butyl ether (MTBE), other gasoline oxygenates and the lead scavengers 1,2-dibromoethane (EDB) and 1,2-dichloroethane (1,2-DCA) by Analytical Method SW8260B. In addition, groundwater samples from MW-2 through MW-5 were analyzed for the inorganic anions bromide and bromate by Analytical Method E300.1, and dissolved metals hexachrome (by Analytical Method E218.6) and molybdenum, selenium and vanadium by Analytical Method E200.8.

TPHg, TPHd, BTEX, MTBE and 1,2-DCA were detected in the groundwater sample collected from MW-3 at 3100 micrograms per liter (µg/l), 370 µg/l, 600 µg/l, 160 µg/l, 87 µg/l, 140 µg/l, 17 µg/l and 14 µg/l, respectively. TPHg, TPHd, BTEX, MTBE, 1,2-DCA, tert-amyl methyl ether (TAME) and t-butyl alcohol (TBA) were detected in the groundwater sample collected from MW-4 at

33,000 µg/l, 3500 µg/l, 3400 µg/l, 210 µg/l, 1400 µg/l, 4200 µg/l, 290 µg/l, 20 µg/l, 14 µg/l and 86 µg/l, respectively. The analytical laboratory described the TPHd results for MW-3 and MW-4 as "gasoline range compounds are significant".

MTBE was detected in samples from MW-5, MW-7, MW-8 and MW-9 at 1.4 µg/l, 2.0 µg/l, 2.7 µg/l and 0.64 µg/l, respectively.

Bromide was detected in groundwater samples collected from MW-3, MW-4 and MW-5 at 0.28 milligrams per liter (mg/l), 0.45 mg/l and 0.37 mg/l, respectively. Hexachrome was detected in MW-2 at 0.92 µg/l. Molybdenum was detected in samples from MW-2, MW-3 and MW-4 at 4.0 µg/l, 1.2 µg/l and 2.0 µg/l, respectively. Selenium was detected in MW-2 at 0.59 µg/l. Vanadium was detected in MW-3 and MW-5 at 0.52 µg/l and 0.57 µg/l, respectively.

The results of analyses of groundwater samples from monitoring wells are presented in Tables 2 and 3. Results of samples previously collected from the water-supply wells are presented in Table 4. A complete copy of the analytical laboratory report is in Appendix B. Groundwater sample results will be electronically submitted to the State GeoTracker Internet Database.

#### **DO And ORP Measurements**

On May 8, 2006, EC&A personnel measured DO and ORP in MW-2 through MW-10. The May 2006 event is the second for which DO and ORP have been measured for baseline purposes. DO, ORP and groundwater temperature and pH measurements are presented in Table 5.

#### **Discussion**

In MW-1, except for low concentrations of TPHg, benzene, ethylbenzene and xylenes detected in January 2001, FHCs were not detected in the other eight sampling events conducted since February 1996. MW-1 was removed from the monitoring program after the June 2003 sampling event.

In MW-2, which is located immediately north of the former UST excavation, MTBE, at minor concentrations, is the only analyte that has been detected. MTBE has been detected in four of the eleven sampling events conducted to date on this well at a maximum concentration of 3.6 µg/l (September 2002).

In MW-3, concentrations of TPHg have ranged from 310 µg/l (October 2004) to 19,000 µg/l (April 2000); TPHd concentrations have ranged from non-detect (ND) <50 µg/l (January 2000) to 1200 µg/l (July 2000 and April 2004). Benzene concentrations in MW-3 have ranged from 19 µg/l (October 2004) to 3700 µg/l (April 2004); MTBE concentrations have ranged from 17 µg/l (May 2006) to 230 µg/l (October 2000). TBA was detected in MW-3 for the April and November 2005 events at 50 µg/l and 13 µg/l, respectively. Lead scavengers EDB has been detected in MW-3 for all but three sampling events at concentrations ranging from 1.2 µg/l (January 2001) to 46 µg/l (July 2000). 1,2-DCA has been detected in MW-3 for each sample event at concentrations ranging from 2.8 µg/l (January 2000) to 220 µg/l (October 2000). FHC concentrations in groundwater from MW-3 fluctuate between monitoring events. Between the November 2005 and May 2006 monitoring

events, concentrations of TPHd, benzene, toluene, ethylbenzene and 1,2-DCA increased; all other analytes decreased or remained ND.

In MW-4, concentrations of TPHg have ranged from 10,000 µg/l (January 2000) to 38,000 µg/l (April 2004) and TPHd concentrations have ranged from 750 µg/l (January 2000) to 7100 µg/l (April 2004). Benzene concentrations have ranged from 1600 µg/l (January 2000 and October 2004) to 4300 µg/l (April 2005) and MTBE concentrations have ranged from 38 µg/l (January 2001) to 620 µg/l (April 2004) in MW-4. TAME has occasionally been detected in MW-4 (up to 14 µg/l) and TBA has been detected in most sampling events (up to 360 µg/l). In May 2006, TAME was 14 µg/l and TBA was 86 µg/l in MW-4. EDB has not been detected for any sampling event, and 1,2-DCA has been detected for each sampling event at concentrations ranging from 20 µg/l (May 2002 and May 2006) to 210 µg/l (January and July 2000). Concentrations of all detected analytes but EDB and 1,2-DCA increased significantly between the November 2005 and May 2006 monitoring events.

In MW-5, concentrations of TPHg, TPHd and benzene have ranged from below their respective detection limits to 420 µg/l (May 2002), 330 µg/l (April 2004) and 6.6 µg/l (June 2003), respectively (Table 2). MTBE has been detected in each event at concentrations ranging from 1.4 µg/l (May 2006) to 110 µg/l (September 2003). TBA has been detected in MW-5 in all but two events at a maximum concentration of 57 µg/l (September 2002), and the lead scavenger 1,2-DCA has been detected in all but one event at a maximum concentration of 46 µg/l (September 2003).

In MW-6, no analytes have been detected above their respective reporting limits except for two minor detections of benzene (October 2004 and November 2005) and a one-time minor detection of toluene, ethylbenzene and xylenes (October 2004).

In MW-7, TPHg, TPHd, benzene, ethylbenzene, TAME and EDB have never been detected. MTBE has been detected in each sample collected from MW-7 at concentrations ranging from 0.62 µg/l (September 2003) to 6.6 µg/l (October 2004). Toluene, xylenes and TBA were detected once in October 2004. 1,2-DCA has been detected twice, in June 2003 and April 2004.

In MW-8, MTBE has been detected for each but one event (April 2005) at concentrations ranging from 1.2 µg/l (April 2004) to 3.3 µg/l (June 2003). TBA has been detected three times at concentrations ranging from 6.0 µg/l (October 2004) to 8.4 µg/l (November 2005).

In MW-9, only MTBE has been detected. Concentrations of MTBE, ranging from 0.64 µg/l (May 2006) to 1.2 µg/l (September 2003), have been detected in all but the October 2004 sampling events.

In MW-10, all analytes have been below their respective reporting limits for all events except for April and November 2005. For the April 2005 event, TPHd was detected for at 200 µg/l. In November 2005, TPHd returned to ND; however, BTEX, at low concentrations, was detected for the first time. All analytes in MW-10 returned to below their respective detection limits for the May 2006 event.

### **Conclusions**

The groundwater-flow direction has been consistently to the southwest. The plume of FHC-impacted groundwater is constrained for all FHCs by ND values, except for MTBE (Figure 4), which is the most widely distributed contaminant in groundwater beneath the site. However, the extent of the MTBE groundwater plume is close to down-gradient wells MW-7, MW-8 and MW-9, which were 2.0 µg/l, 2.7 µg/l and 0.64 µg/l, respectively, for the May 2006 sampling event. The North Coast Regional Water Quality Control Board's (NCRWQCB's) Water Quality Objective (WQO) for MTBE is 5.0 µg/l.

The greatest FHC concentrations continue to be detected in MW-3 and MW-4; elevated FHC concentrations have also been detected in MW-5. Concentrations of FHCs, including oxygenates and lead scavengers, fluctuate in groundwater from MW-3, MW-4 and MW-5. Concentrations in these wells appear to be higher when the water table is high. Low to minor FHC concentrations have been detected in MW-1, MW-2, and MW-6 through MW-10.

A significant portion of the TPHd results detected in groundwater samples collected from the site monitoring wells are representative of gasoline-range hydrocarbons as indicated by the analytical laboratory.

### **Recommendations**

The current groundwater sampling program should be continued until the ozone microsparging system is installed and running, at which time the monitoring program will be revised. Complete details of the sampling program that will be implemented after the installation and startup of the ozone system are included in EC&A's October 4, 2005 *Remedial Action Plan* and November 16, 2005 *Remedial Action Plan Addendum*.

### **Schedule**

The next semi-annual sampling event is scheduled for November 2006. Water levels will be measured in all of the monitoring wells and groundwater samples will be collected from MW-3 through MW-10. Groundwater samples will be analyzed for TPHg, TPHd and BTEX by Analytical Methods SW8015Cm/8015C/8021B, and for MTBE, other gasoline oxygenates and lead scavengers EDB and 1,2-DCA by Analytical Method SW8260B.

EC&A's October 4, 2005 Remedial Action Plan (RAP) and November 16, 2005 RAP Addendum for ozone microsparging were approved by the CSDHS in their November 30, 2005 letter.

### **Limitations**

The conclusions presented in this report are professional opinions based on the information presented herein, which includes data generated by others. Whereas EC&A does not guarantee the accuracy of data supplied by third parties, we reserve the right to use this data in formulating our professional opinions. This report is intended only for the indicated purpose and project site. Conclusions and recommendations presented herein apply to site conditions existing at the time of our study. Changes in the conditions of the site property can occur with time because of natural

processes or the works of man on the site or adjacent properties. In addition, changes in applicable standards can also occur as the result of legislation or from the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond our control.

Thank you for allowing EC&A the opportunity to provide environmental services for you. Please call John Calomiris, project manager, if you have any questions.

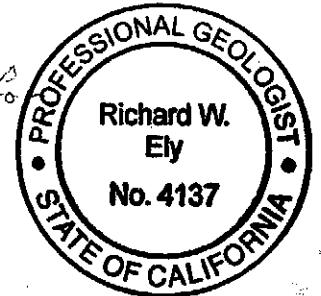
Sincerely,

*Etta Jon VandenBosch*

Etta Jon VandenBosch  
Environmental Scientist

*Richard W. Ely*

Richard Ely, PG #4137  
Senior Geologist



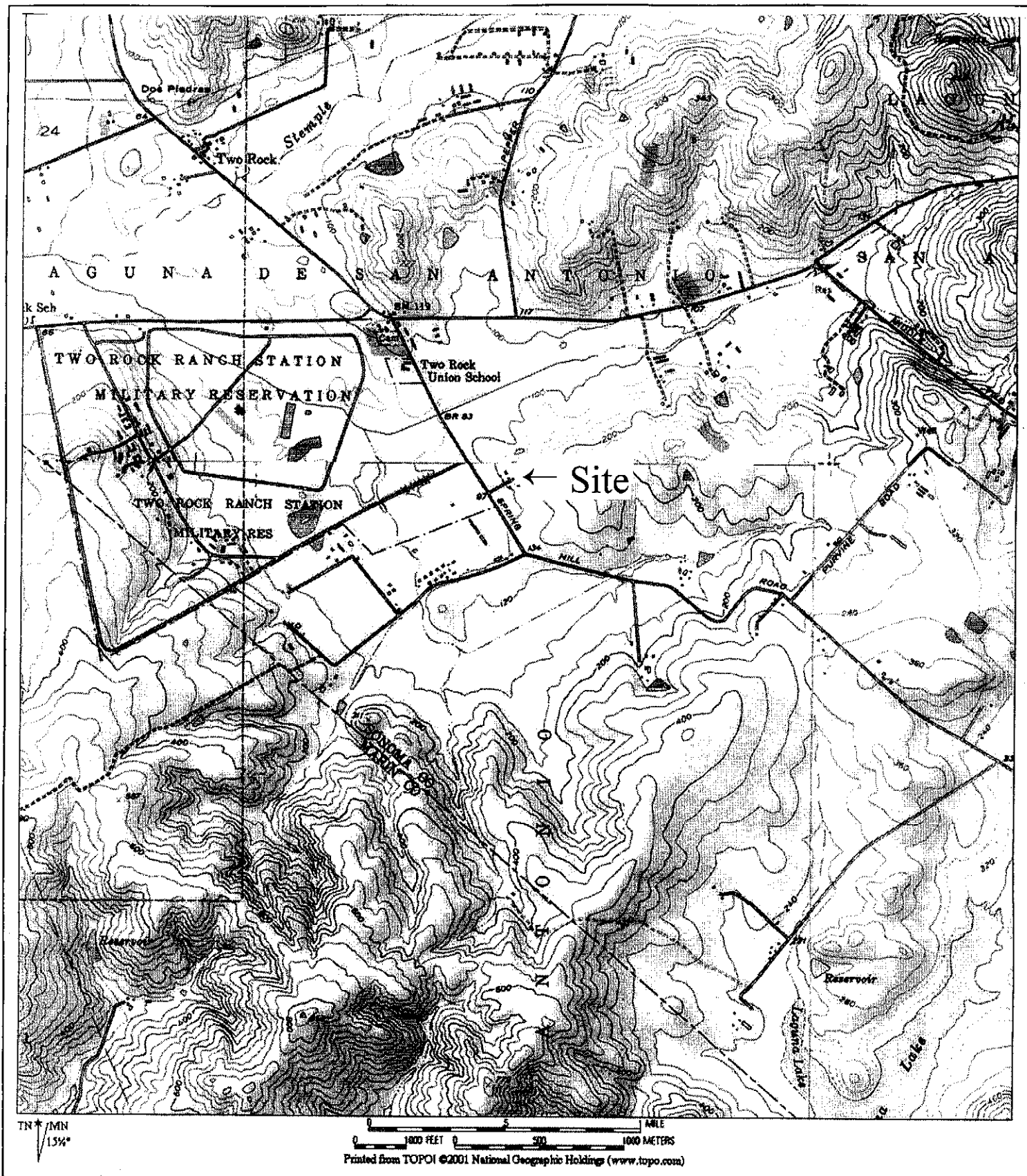
Attachments: Figure 1 - Site Location Map  
Figure 2 - Site Plan  
Figure 3 - Groundwater Elevation Map, 08 May 2006  
Figure 4 - Isocontour Map of MTBE in Groundwater, 08 and 09 May 2006

Table 1 - Groundwater Elevation Data  
Table 2 - Analytical Results - Groundwater Samples from Monitoring Wells: Fuel Hydrocarbons, Oxygenates and Lead Scavengers  
Table 3 - Analytical Results - Groundwater Samples from Monitoring Wells: Inorganic Anions and Metals  
Table 4 - Analytical Results - Groundwater Samples from Water-supply Wells  
Table 5 - Monitoring Well Groundwater Results for Dissolved Oxygen, Oxidation Reduction Potential and Temperature

Appendix A - Groundwater Field Logs  
Appendix B - Analytical Laboratory Report

cc: Darcy M. Bering, County of Sonoma Department of Health Services

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**Site Location Map**  
C & R Ranches  
4550 Spring Hill Road  
Petaluma, California

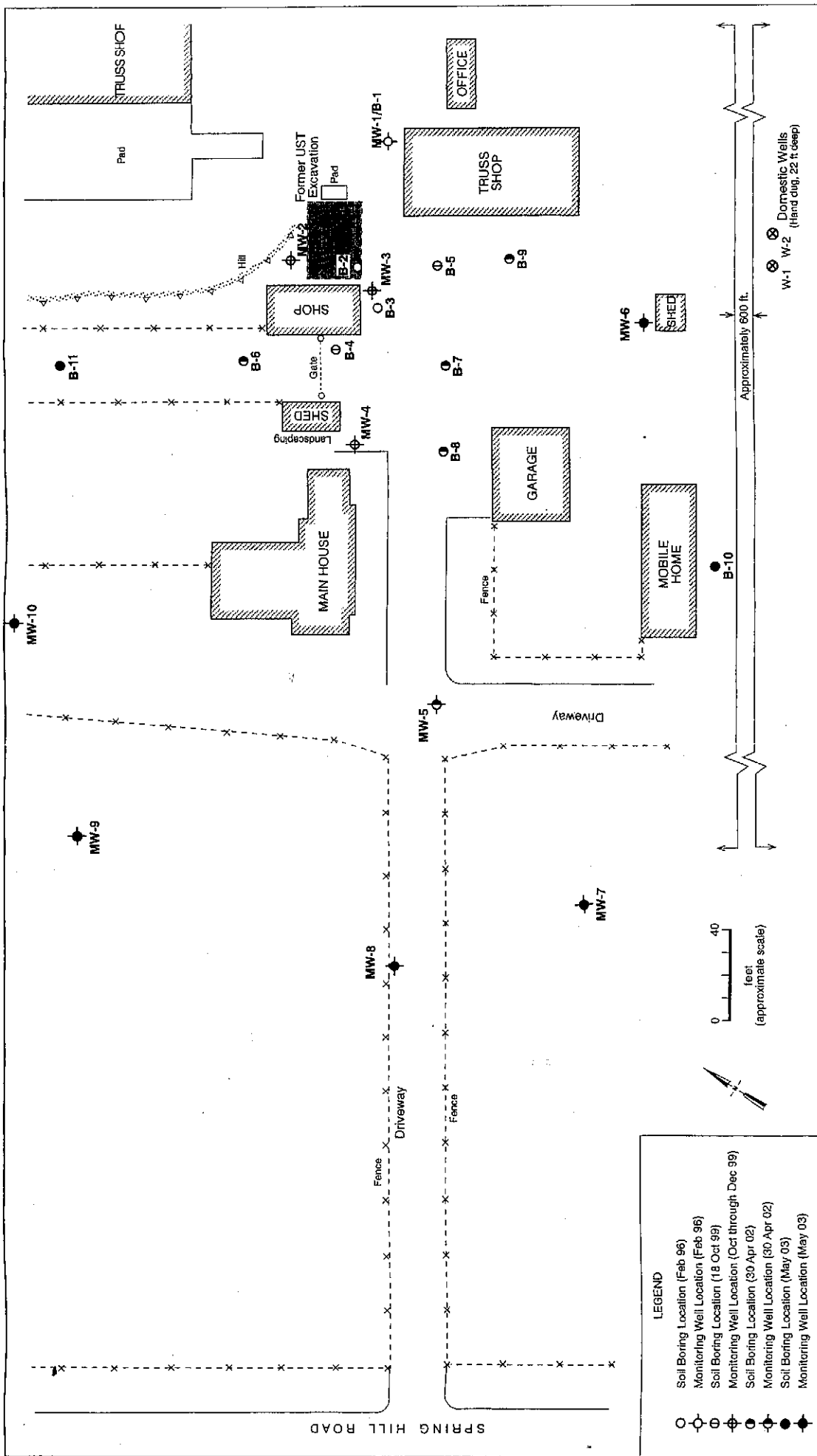
**FIGURE**  
**1**

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REVIEWED BY  
Leslye Choate

DATE  
October 2004

REVISED DATE



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**SITE PLAN**  
C&R Ranches  
4550 Spring Hill Road  
Petaluma, California

FIGURE

2

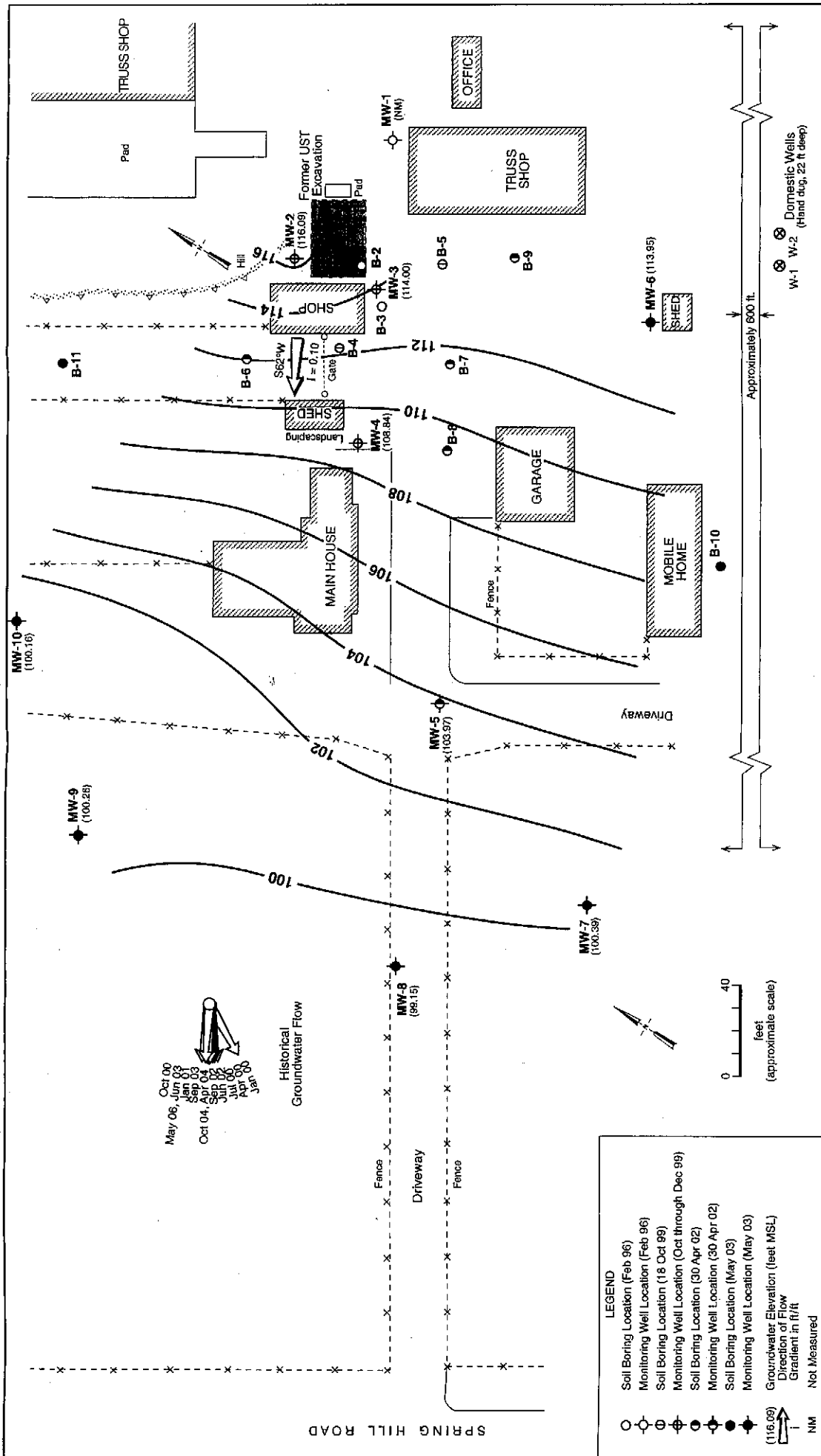
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FIGURE

2

SHEET NO. 1 of 1





GROUNDWATER ELEVATION MAP,		FIGURE	3
08 May 2006		C&R Ranches	
4550 Spring Hill Road		Petaluma, California	
JANUARY 2000		REVIEWED	
EC&A, E.J. VandenBorch		August 2006	
0108, 003.93		REVIEWED BY	
JOB NUMBER		SHEET NO. 1 of 1	

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(TRACE #258R/16440)

FIGURE  
3  
SHEET NO. 1 of 1



**Table 1. Groundwater Elevation Data**  
**C&R Ranches, 4550 Spring Hill Road, Petaluma, California**

Well ID	TOC Elevation feet msl	Date	Depth to Water feet	Groundwater Elevation feet msl
MW-1	120.00	01/21/00	5.21	114.79
MW-2	116.07		5.16	110.91
MW-3	115.13		6.95	108.18
MW-4	110.06		5.79	104.27
Gradient: S 43° W, 0.08 ft/ft				
MW-1	120.00	04/05/00	5.30	114.70
MW-2	116.07		4.35	111.72
MW-3	115.13		4.95	110.81
MW-4	110.06		5.50	104.56
Gradient: S 66° W, 0.10 ft/ft				
MW-1	120.00	07/12/00	6.65	113.35
MW-2	116.07		7.44	108.63
MW-3	115.13		7.71	107.42
MW-4	110.06		7.67	102.39
Gradient: S 70° W, 0.097 ft/ft				
MW-1	120.00	10/20/00	8.11	111.89
MW-2	116.07		10.13	105.94
MW-3	115.13		10.11	105.02
MW-4	110.06		10.74	99.32
Gradient: S 80° W, 0.10 ft/ft				
MW-1	120.00	01/22/01	6.81	113.19
MW-2	116.07		8.04	108.03
MW-3	115.13		8.22	106.91
MW-4	110.06		9.36	100.70
Gradient: S 74° W, 0.093 ft/ft				

**Table 1. Groundwater Elevation Data  
C&R Ranches, 4550 Spring Hill Road, Petaluma, California**

Well ID	TOC Elevation feet msl	Date	Depth to Water feet	Groundwater Elevation feet msl
MW-1	123.85	05/09/02	6.72	117.13
MW-2	119.92		6.81	113.11
MW-3	118.98		7.07	111.91
MW-4	113.91		7.31	106.60
MW-5	108.04		6.39	101.65
Gradient: S 70° W, 0.075 ft/ft				
MW-1	123.85	09/23/02	9.88	113.97
MW-2	119.92		10.47	109.45
MW-3	118.98		10.45	108.53
MW-4	113.91		10.70	103.21
MW-5	108.04		11.91	96.13
Gradient: S 77° W, 0.080 ft/ft				
MW-1	123.77	06/04/03	5.83	117.94
MW-2	119.92		5.43	114.49
MW-3	118.90		5.76	113.14
MW-4	113.91		6.20	107.71
MW-5	108.04		5.72	102.32
MW-6	119.27		6.47	112.8
MW-7	105.79		6.80	98.99
MW-8	102.99		5.68	97.31
MW-9	104.93		6.26	98.67
MW-10	104.36		5.91	98.45
Gradient: S 61° W, 0.076 ft/ft				

**Table 1. Groundwater Elevation Data  
C&R Ranches, 4550 Spring Hill Road, Petaluma, California**

Well ID	TOC Elevation feet msl	Date	Depth to Water feet	Groundwater Elevation feet msl
MW-1	123.77	09/11/03	8.84	114.93
MW-2	119.92		9.38	110.54
MW-3	118.90		9.31	109.59
MW-4	113.91		10.03	103.88
MW-5	108.04		10.09	97.95
MW-6	119.27		10.83	108.44
MW-7	105.79		9.37	96.42
MW-8	102.99		8.97	94.02
MW-9	104.93		9.89	95.04
MW-10	104.36		9.51	94.85
Gradient: S58° W, 0.086 ft/ft				
MW-1	123.77	04/29/04	6.56	117.21
MW-2	119.92		6.49	113.43
MW-3	118.90		6.78	112.12
MW-4	113.91		7.07	106.84
MW-5	108.04		6.15	101.89
MW-6	119.27		7.85	111.42
MW-7	105.79		7.05	98.74
MW-8	102.99		6.00	96.99
MW-9	104.93		6.57	98.36
MW-10	104.36		6.72	97.64
Gradient: S58° W, 0.078 ft/ft				

**Table 1. Groundwater Elevation Data  
C&R Ranches, 4550 Spring Hill Road, Petaluma, California**

Well ID	TOC Elevation feet msl	Date	Depth to Water feet	Groundwater Elevation feet msl
MW-1	123.77	10/22/04	7.84	115.93
MW-2	119.92		11.79	108.13
MW-3	118.90		11.06	107.84
MW-4	113.91		11.22	102.69
MW-5	108.04		12.51	95.53
MW-6	119.27		12.94	106.33
MW-7	105.79		11.92	93.87
MW-8	102.99		11.05	91.94
MW-9	104.93		12.24	92.69
MW-10	104.36		12.94	91.42
Gradient: S58° W, 0.12 ft/ft				
MW-1	123.77	04/06/05	---	---
MW-2	119.92		2.37	117.55
MW-3	118.90		3.76	115.14
MW-4	113.91		3.37	110.54
MW-5	108.04		2.95	105.09
MW-6	119.27		4.30	114.97
MW-7	105.79		3.75	102.04
MW-8	102.99		1.80	101.19
MW-9	104.93		2.86	102.07
MW-10	104.36		2.03	102.33
Gradient: S58°W, 0.12 ft/ft				

**Table 1. Groundwater Elevation Data  
C&R Ranches, 4550 Spring Hill Road, Petaluma, California**

Well ID	TOC Elevation feet msl	Date	Depth to Water feet	Groundwater Elevation feet msl
MW-1	123.77	11/22/05	7.86	115.91
MW-2	119.92		10.26	109.66
MW-3	118.90		10.46	108.44
MW-4	113.91		11.22	102.69
MW-5	108.04		10.83	97.21
MW-6	119.27		10.79	108.48
MW-7	105.79		9.96	95.83
MW-8	102.99		9.36	93.63
MW-9	104.93		10.56	94.37
MW-10	104.36		11.53	92.83
3 Gradient: S65°W, 0.096 ft/ft				
MW-2	119.92	05/08/06	3.83	116.09
MW-3	118.90		4.90	114.00
MW-4	113.91		5.07	108.84
MW-5	108.04		4.07	103.97
MW-6	119.27		5.32	113.95
MW-7	105.79		5.40	100.39
MW-8	102.99		3.84	99.15
MW-9	104.93		4.67	100.26
MW-10	104.36		4.20	100.16
Gradient: S62°W, 0.10 ft/ft				

TOC: Top of casing  
feet msl: Measured in feet relative to mean sea level

The TOC elevations for monitoring wells MW-1 through MW-4 were re-surveyed and MW-5 surveyed on June 19, 2002. An adjustment of 3.85 ft was made to the existing TOC elevations that were previously based on the proximity of the 120.0 ft contour as shown on the USGS Point Reyes quadrangle dated 1954. The vertical datum used for the June 2002 survey is a benchmark located on U.S. Coast Guard Training Center land. In June 2003, the TOC elevations for MW-1, MW-3 and MW-5 were re-surveyed and MW-6 through MW-10 were surveyed.

**Table 2. Analytical Results - Groundwater Samples from Monitoring Wells: Fuel Hydrocarbons, Oxygenates and Lead Scavengers**  
**C&R Ranches, 4550 Spring Hill Road, Petaluma, California**

Well ID	Sample Date	TPHg µg/l	TPHd µg/l	Benzene µg/l	Toluene µg/l	Ethyl- benzene µg/l	Xylenes µg/l	MTBE µg/l	TAME µg/l	TBA µg/l	EDB µg/l	1,2-DCA µg/l
MW-1 †	02/15/96	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
	01/21/00	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<1	ND	ND	ND	ND
	04/05/00	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0 *	NA	NA	NA	NA
	07/12/00	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0 *	NA	NA	NA	NA
	10/20/00	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0 *	NA	NA	NA	NA
	01/22/01	210 *	ND<50	1.1	ND<0.5	11	37	ND<5.0 *	NA	NA	NA	NA
	05/09/02	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	09/23/02	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	06/04/03	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	01/21/00	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<1	ND	ND	ND	ND
MW-2 †	04/05/00	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0 *	NA	NA	NA	NA
	07/12/00	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0 *	NA	NA	NA	NA
	10/20/00	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0 *	NA	NA	NA	NA
	01/22/01	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0 *	NA	NA	NA	NA
	05/09/02	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.2	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	09/23/02	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.6	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	06/04/03	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.60	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	04/29/04	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.91	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	04/07/05	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	05/08/06	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5



**Table 2. Analytical Results - Groundwater Samples from Monitoring Wells: Fuel Hydrocarbons, Oxygenates and Lead Scavengers**  
**C&R Ranches, 4550 Spring Hill Road, Petaluma, California** Page 2 of 5

Well ID	Sample Date	TPHg µg/l	TPHd µg/l	Benzene µg/l	Toluene µg/l	Ethyl- benzene µg/l	Xylenes µg/l	MTBE µg/l	TAME µg/l	TBA µg/l	EDB µg/l	1,2-DCA µg/l
MW-3	01/21/00	2300 <sup>a</sup>	ND<50	130	220	36	290	41	ND	ND	21	2.8
	04/05/00	19,000 <sup>a</sup>	1000 <sup>d</sup>	3600	1400	580	1900	190	ND	ND	36	150
	07/12/00	16,000 <sup>a</sup>	1200 <sup>d</sup>	3600	1100	590	1100	140	ND	ND	46	180
	10/20/00	12,000 <sup>a</sup>	970 <sup>d</sup>	2300	540	480	690	230	ND	ND	26	220
	01/22/01	1400 <sup>a</sup>	280 <sup>d</sup>	210	26	70	50	21	ND	ND	1.2	28
	05/09/02	7900 <sup>a</sup>	NA	1400	790	420	510	100	ND	ND<50	34	140
	09/23/02	1300 <sup>a</sup>	NA	120	7.0	180	42	65	ND<0.5	ND<10	3.7	80
	06/05/03	6700 <sup>a</sup>	740 <sup>d</sup>	1300	550	340	410	67	ND<5.0	ND<50	21	110
	09/11/03	3700 <sup>a</sup>	630 <sup>d</sup>	690	200	260	190	72	ND<5.0	ND<50	8.3	81
	04/29/04	16,000 <sup>a</sup>	1200 <sup>db</sup>	3700	1400	730	1000	130	ND<10	ND<100	16	63
	10/22/04	310 <sup>a</sup>	200 <sup>d</sup>	19	9.2	5.6	7.2	27	ND<0.5	ND<5.0	ND<0.5	5.5
	04/07/05	2300 <sup>a</sup>	290 <sup>d</sup>	540	170	110	160	18	ND<0.5	50	4.6	21
	11/22/05	3700 <sup>a</sup>	350 <sup>d</sup>	450	140	54	170	23	ND<0.5	13	ND<0.5	11
	05/09/06	3100 <sup>a</sup>	370 <sup>d</sup>	600	160	87	140	17	ND<5.0	ND<50	ND<5.0	14
MW-4	01/21/00	10,000 <sup>a</sup>	750 <sup>db</sup>	1600	110	330	1500	48	ND	ND	ND	210
	04/05/00	34,000 <sup>a</sup>	1700 <sup>d</sup>	3400	590	1000	4200	200	ND	ND	ND	170
	07/12/00	29,000 <sup>a</sup>	1900 <sup>d</sup>	3400	190	1200	4400	100	ND	260	ND	210
	10/20/00	19,000 <sup>a</sup>	1100 <sup>d</sup>	1700	95	930	3200	64	ND	190	ND	180
	01/22/01	26,000 <sup>a</sup>	3600 <sup>db</sup>	2000	220	1100	3900	38	ND	ND	ND	190
	05/09/02	27,000 <sup>a</sup>	NA	3700	430	1100	4000	41	1.1	27	ND<0.5	20
	09/23/02	14,000 <sup>ab</sup>	NA	2300	95	770	2400	60	ND<0.5	160	ND<5.0	130

**Table 2. Analytical Results - Groundwater Samples from Monitoring Wells: Fuel Hydrocarbons, Oxygenates and Lead Scavengers**  
**C&R Ranches, 4550 Spring Hill Road, Petaluma, California** Page 3 of 5

Well ID	Sample Date	TPHg µg/l	TPHd µg/l	Benzene µg/l	Toluene µg/l	Ethyl- benzene µg/l	Xylenes µg/l	MTBE µg/l	TAME µg/l	TBA µg/l	EDB µg/l	1,2-DCA µg/l
MW-4 cont.	06/04/03	31,000 <sup>a</sup>	3900 <sup>d</sup>	3600	470	1300	4500	440	11	140	ND<5.0	200
	09/11/03	26,000 <sup>a</sup>	2600 <sup>d</sup>	2900	160	1400	4200	97	ND<5.0	110	ND<5.0	160
	04/29/04	38,000 <sup>a</sup>	7100 <sup>db</sup>	2900	280	2300	7300	620	12	130	ND<10	73
	10/22/04	16,000 <sup>a</sup>	1900 <sup>d</sup>	1600	53	740	2000	62	ND<5.0	80	ND<5.0	110
	04/07/05	27,000 <sup>a</sup>	2900 <sup>d</sup>	4300	160	1400	3600	170	5.3	360	ND<5.0	44
	11/22/05	12,000 <sup>a</sup>	860 <sup>d</sup>	3100	64	640	1300	71	ND<10	ND<100	ND<10	85
	05/09/06	33,000 <sup>a</sup>	3500 <sup>d</sup>	3400	210	1400	4200	290	14	86	ND<5.0	20
MW-5	05/09/02	420 <sup>a</sup>	NA	5.1	ND<0.5	5.3	22	98	ND	27	ND<1.7	35
	09/23/02	61 <sup>a,b</sup>	NA	1.0	ND<0.5	ND<0.5	ND<0.5	62	ND<0.5	57	ND<2.5	19
	06/05/03	170 <sup>a</sup>	110 <sup>d</sup>	6.6	ND<0.5	5.4	5.8	6.7	ND<0.5	ND<5.0	ND<0.5	0.66
	09/11/03	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	110	ND<2.5	37	ND<2.5	46
	04/29/04	320 <sup>a</sup>	330 <sup>d</sup>	6.2	1.0	2.6	7.3	32	ND<0.5	5.3	ND<0.5	5.1
	10/22/04	ND<50	ND<50	ND<0.5	0.67	ND<0.5	1.1	29	ND<0.5	29	ND<0.5	11
	04/07/05	84 <sup>a</sup>	88 <sup>d</sup>	1.2	ND<0.5	0.89	ND<0.5	30	ND<0.5	9.6	ND<0.5	7.7
	11/22/05	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	30	ND<0.5	35	ND<0.5	13
	05/08/06	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.4	ND<0.5	ND<5.0	ND<0.5	ND<0.5
MW-6	06/04/03	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	09/11/03	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	04/29/04	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	10/22/04	ND<50	ND<50	0.74	4.7	1.3	5.1	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	04/07/05	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5

**Table 2. Analytical Results - Groundwater Samples from Monitoring Wells: Fuel Hydrocarbons, Oxygenates and Lead Scavengers**

Well ID	Sample Date	TPHg µg/l	TPHd µg/l	Benzene µg/l	Toluene µg/l	Ethyl- benzene µg/l	Xylenes µg/l	MTBE µg/l	TAME µg/l	TBA µg/l	EDB µg/l	1,2-DCA µg/l
MW-6 cont.	11/22/05	ND<50	ND<50	1.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	05/08/06	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
MW-7	06/05/03	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.0	ND<0.5	ND<5.0	ND<0.5	1.3
	09/11/03	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.62	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	04/29/04	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.2	ND<0.5	ND<5.0	ND<0.5	0.90
	10/22/04	ND<50	ND<50	ND<0.5	0.60	ND<0.5	0.69	6.6	ND<0.5	17	ND<0.5	ND<0.5
	04/07/05	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.91	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	11/22/05	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.97	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	05/08/06	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.0	ND<0.5	ND<5.0	ND<0.5	ND<0.5
MW-8	06/04/03	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.3	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	09/11/03	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.8	ND<0.5	7.0	ND<0.5	ND<0.5
	04/29/04	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.2	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	10/22/04	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.9	ND<0.5	6.0	ND<0.5	ND<0.5
	04/07/05	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	11/22/05	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.2	ND<0.5	8.4	ND<0.5	ND<0.5
	05/08/06	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.7	ND<0.5	ND<5.0	ND<0.5	ND<0.5
MW-9	06/05/03	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.68	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	09/11/03	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.2	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	04/29/04	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.93	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	10/22/04	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	04/07/05	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.77	ND<0.5	ND<5.0	ND<0.5	ND<0.5

**Table 2. Analytical Results - Groundwater Samples from Monitoring Wells: Fuel Hydrocarbons, Oxygenates and Lead Scavengers**  
**C&R Ranches, 4550 Spring Hill Road, Petaluma, California** Page 5 of 5

Well ID	Sample Date	TPHg µg/l	TPHd µg/l	Benzene µg/l	Toluene µg/l	Ethyl- benzene µg/l	Xylenes µg/l	MTBE µg/l	TAME µg/l	TBA µg/l	EDB µg/l	1,2-DCA µg/l
MW-9 cont.	11/22/05	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.65	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	05/08/06	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.64	ND<0.5	ND<5.0	ND<0.5	ND<0.5
MW-10	06/05/03	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	09/11/03	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	04/29/04	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	10/22/04	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	04/07/05	ND<50	200 <sup>a,b</sup>	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	11/22/05	ND<50	ND<50	6.2	3.6	1.6	4.6	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5
	05/08/06	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5

TPHg: Total petroleum hydrocarbons as gasoline

TPHd: Total petroleum hydrocarbons as diesel

MTBE: Methyl tert-butyl ether analyzed by EPA Method 8260B unless otherwise noted

EDB: 1,2-Dibromoethane (ethylene dibromide)

1,2-DCA: 1,2-Dichloroethane

TBA: Tert-butanol (tert-butyl alcohol)

µg/l: Micrograms per liter

NA: Not analyzed

ND: Not detected above the reporting limit

a: Unmodified or weakly modified gasoline is significant

b: Diesel range compounds are significant; no recognizable pattern

d: Gasoline range compounds are significant

g: Oil range compounds are significant

h: Lighter than water immiscible sheen is present

\*: Samples analyzed for MTBE by Analytical Method SW8020

†: Sampling of MW-1 has been discontinued. MW-2 is usually sampled during seasonally high groundwater levels.

**Table 3. Analytical Results - Groundwater Samples from Monitoring Wells: Inorganic Anions and Metals  
C&R Ranches, 4550 Spring Hill Road, Petaluma, California**

<b>Sample ID</b>	<b>Date</b>	<b>Bromide mg/l</b>	<b>Bromate mg/l</b>	<b>Hexachrome µg/l</b>	<b>Molybdenum µg/l</b>	<b>Selenium µg/l</b>	<b>Vanadium µg/l</b>
MW-2	11/22/05	ND<0.1	ND<0.005	0.43	ND<0.5	ND<0.5	ND<0.5
	05/08/06	ND<0.1	ND<0.005	0.92	4.0	0.59	ND<0.5
MW-3	11/22/05	0.25	ND<0.005	ND<0.2	5.1	ND<0.5	1.9
	05/09/06	0.28	ND<0.005	ND<0.2	1.2	ND<0.5	0.52
MW-4	11/22/05	0.52	ND<0.005	ND<0.2	4.7	ND<0.5	ND<0.5
	05/09/06	0.45	ND<0.005	ND<0.2	2.0	ND<0.5	ND<0.5
MW-5	11/22/05	0.35	ND<0.005	ND<0.2	0.72	ND<0.5	ND<0.5
	05/08/06	0.37	ND<0.005	ND<0.2	ND<0.5	ND<0.5	0.57

mg/l: Milligram per liter  
µg/l: Micrograms per liter  
ND: Not detected above the reporting limit

**Table 4. Analytical Results - Groundwater Samples from Water-supply Wells  
C&R Ranches, 4550 Spring Hill Road, Petaluma, California**

Well ID	Sample Date	TPHg µg/l	TPHd µg/l	MTBE µg/l	Benzene µg/l	Toluene µg/l	Ethyl- benzene µg/l	Xylenes µg/l
W1	12/10/99 <sup>1</sup>	ND<50	ND<50	ND<1	ND<1	ND<1	ND<1	ND<1
	06/04/03 <sup>2</sup>	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
W2	12/10/99 <sup>1</sup>	ND<50	ND<50	ND<1	ND<1	ND<1	ND<1	ND<1
	06/04/03 <sup>2</sup>	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5

TPHg: Total petroleum hydrocarbons as gasoline

TPHd: Total petroleum hydrocarbons as diesel

MTBE: Methyl tert-butyl ether; analyzed by EPA Method 8020 unless noted otherwise

µg/l: Micrograms per liter

ND: Not detected above the reporting limit

1: Samples also analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX), MTBE and other gasoline oxygenates and lead scavengers 1,2-dibromoethane (EDB) and 1,2-dichloroethane (1,2-DCA) by Analytical Method SW8260B; results were all ND.

2: Samples also analyzed for MTBE and other gasoline oxygenates and lead scavengers EDB and 1,2-DCA by Analytical Method SW8260B; results were all ND.

**Table 5. Monitoring Well Groundwater Results for Dissolved Oxygen, Oxidation Reduction Potential, Temperature and pH  
4550 Spring Hill Road, Petaluma, California**

Well ID	Date	Depth to Water (feet)	Dissolved Oxygen (mg/l)	Oxygen Reduction Potential (mV)	Temperature (°F)	pH
MW-1	11/22/05 <sup>1</sup>	7.86	---	---	---	---
MW-2	11/22/05 <sup>1</sup>	10.26	---	---	63.1	6.59
	05/08/06 <sup>1</sup>	3.83	1.17	161	61.3	6.45
MW-3	11/22/05 <sup>1</sup>	10.46	0.19	-27	66.4	6.92
	05/09/06 <sup>1</sup>	4.90	0.76	-73	63.6	6.75
MW-4	11/22/05 <sup>1</sup>	11.22	0.30	-33	62.9	6.58
	05/09/06 <sup>1</sup>	5.07	0.71	-72	61.6	6.78
MW-5	11/22/05 <sup>1</sup>	10.83	0.23	60	62.9	6.80
	05/08/06 <sup>1</sup>	4.07	0.39	-14	60.2	7.42
MW-6	11/22/05 <sup>1</sup>	10.79	1.01	48	66.2	6.37
	05/08/06 <sup>1</sup>	5.32	0.53	140	61.3	6.45
MW-7	11/22/05 <sup>1</sup>	9.96	0.77	80	65.5	6.71
	05/08/06 <sup>1</sup>	5.40	3.73	119	61.0	7.12
MW-8	11/22/05 <sup>1</sup>	9.36	0.92	119	64.3	6.96
	05/08/06 <sup>1</sup>	3.84	0.65	88	60.8	6.48
MW-9	11/22/05 <sup>1</sup>	10.56	0.30	9	64.1	6.98
	05/08/06 <sup>1</sup>	4.67	0.38	50	61.0	7.20
MW-10	11/22/05 <sup>1</sup>	11.53	0.91	5	62.2	6.84
	05/08/06 <sup>1</sup>	4.20	4.98	-65	59.1	7.03

mg/l: Milligrams per liter

mV: Millivolts

°F: Degrees Fahrenheit

1: Baseline measurements collected prior to system startup

---: Not measured

Unless noted otherwise, groundwater parameters were measured without purging.

# **Appendix A**

## **Groundwater Field Logs**



# DAILY FIELD RECORD

Page 1 of 10

Project and Task Number: 0108	Date: 5/8/06
Project Name: C & R Rancher	Field Activity: Quarterly Ground Water Monitoring
Location:	Weather:
Time of OVM Calibration:	Windy Rain Sunny Rain/sun

PERSONNEL			
Name	Company	Time In	Time Out
Rodney	Edd Clark & Associates, Inc.	8	5

DRUM ID	DESCRIPTION OF CONTENTS AND QUANTITY	LOCATION
3	water	

TIME	DESCRIPTION OF WORK PERFORMED
	Order 2,6,7,9,8,10,5,3,4
	Load
	Depart Mh-2 3.83
	Arrive on site, turn of ozone panel (if site has one) Mh-6 5.32
	open all wells Mh-7 5.40
	Setup decon Mh-9 4.67
	Take DTW's Mh-8 3.84
	Calculate GWF logs Mh-10 4.20
	Begin purging wells in order Mh-5 4.07
	Allow time for recharge Mh-3 4.90
	Start sampling wells Mh-4 5.07
	Close & lock all wells
	Turn on Ozone panel (if site has one)
	Clean up site
	Depart
	Paper work at office

# FIELD LOG

<input checked="" type="checkbox"/> GROUNDWATER		<input type="checkbox"/> SURFACE WATER		<input type="checkbox"/> DOMESTIC WATER		<input type="checkbox"/> IRRIGATION WATER		<input type="checkbox"/> WELL DEVELOPMENT	
Project No: 0108					Field point name: MW-2				
Global ID: T060 9744 339					Well depth from TOC: 25				
Project location: 4550 SPRING HILL RD					Well diameter: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> Other:				
Date: 5/8/06					Product level from TOC:				
Time:					Water level from TOC: 3.83				
Recorded by: Rodney					Screened interval:				
Purge time (duration):					Well elevation (TOC):				
WEATHER									
Wind: 0-5 MPH					Precip. in last 5 days: no				
VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING									
<input checked="" type="checkbox"/> 2" well = 0.17 gal/ft 21.17			<input type="checkbox"/> 6" well = 1.47 gal/ft			Gallons in 1 well volume: 3.59			
<input type="checkbox"/> 4" well = 0.66 gal/ft			<input type="checkbox"/> " well = gal/ft			Total gallons removed: 10.8		Well volumes removed: 3	
CALIBRATION									
Parameter	Time	Calibration	Before Sampling	Time	After Sampling				
EC:									
FIELD MEASUREMENTS									
Time	pH	EC	Temp °F	ORP mV	DO mg/l	Case Volume gal.	Appearance		
	6.47	546.4	63.4	160	2.31	1/ 3.6	Low turbidity		
	6.43	555.1	61.2	158	1.99	2/ 7.2	no odor		
	6.45	524.0	61.3	161	1.17	3/ 10.8	no sheen		
Notes:									
Water level after purging below TOC:					80% of original water level below TOC: Yes				
Water level before sampling below TOC: 3.88									
Appearance of sample:					Time: 12:30				
<input type="checkbox"/> Bailer:	Type:	GPM:	<input type="checkbox"/> Pump: ES-		Type: Submersible	GPM: 1-2			
<input type="checkbox"/> Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse						
Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input checked="" type="checkbox"/> TPHd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input checked="" type="checkbox"/> oxygenates	<input checked="" type="checkbox"/> Lead scavengers	<input type="checkbox"/> VOCs	<input type="checkbox"/> Nitrates	
EPA Method:									
Other: <input checked="" type="checkbox"/> BROMATE, BROMITE, VANADIUM, SELENIUM, MOLYBDENUM, HEXACHROME									
LABORATORY: <input checked="" type="checkbox"/> McCampbell Analytical <input type="checkbox"/> Other:									

# FIELD LOG

<input checked="" type="checkbox"/> GROUNDWATER		<input type="checkbox"/> SURFACE WATER		<input type="checkbox"/> DOMESTIC WATER		<input type="checkbox"/> IRRIGATION WATER		<input type="checkbox"/> WELL DEVELOPMENT	
Project No: 0108					Field point name: Mw-3				
Global ID: T060					Well depth from TOC: 25				
Project location: 4550 SPRING HILL RD					Well diameter: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> Other:				
Date: 5/9/06					Product level from TOC:				
Time:					Water level from TOC: 4.90				
Recorded by: Rodney					Screened interval: 10-25				
Purge time (duration):					Well elevation (TOC): 118.98				
<b>WEATHER</b>									
Wind: 0-5 mph					Precip. in last 5 days: no				
<b>VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING</b>									
<input checked="" type="checkbox"/> 2" well = 0.17 gal/ft 20.1			<input type="checkbox"/> 6" well = 1.47 gal/ft			Gallons in 1 well volume: 3.41			
<input type="checkbox"/> 4" well = 0.66 gal/ft			<input type="checkbox"/> " well = gal/ft			Total gallons removed: 10.23		Well volumes removed: 3	
<b>CALIBRATION</b>									
Parameter	Time	Calibration	Before Sampling	Time	After Sampling				
EC:									
<b>FIELD MEASUREMENTS</b>									
Time	pH	EC	Temp °F	ORP mV	DO mg/l	Case Volume gal.	Appearance		
	6.98	739.9	64.7	-72	.56	1/3.41	no turbidity		
	6.86	829.4	63.8	-70	.65	2/6.82	Heavy Odor		
	6.75	832.9	63.6	-73	.76	3/10.23	no sheen		
Notes:									
Water level after purging below TOC:					80% of original water level below TOC: yes				
Water level before sampling below TOC: 4.99									
Appearance of sample:					Time: 12:30				
<input type="checkbox"/> Bailer:	Type:	GPM:	<input type="checkbox"/> Pump: ES-		Type: Submersible	GPM: 1-2			
<input type="checkbox"/> Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse						
Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input checked="" type="checkbox"/> TPHd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input checked="" type="checkbox"/> oxygenates	<input checked="" type="checkbox"/> Lead scavengers	<input type="checkbox"/> VOCs	<input type="checkbox"/> Nitrates	
EPA Method:									
Other: <input checked="" type="checkbox"/> Bromate, Bromite, Vanadium, Selenium, Molybdenum, Hexachrome									
LABORATORY: <input checked="" type="checkbox"/> McCampbell Analytical <input type="checkbox"/> Other:									

# FIELD LOG

<input checked="" type="checkbox"/> GROUNDWATER		<input type="checkbox"/> SURFACE WATER		<input type="checkbox"/> DOMESTIC WATER		<input type="checkbox"/> IRRIGATION WATER		<input type="checkbox"/> WELL DEVELOPMENT	
Project No: 0108					Field point name: Mh-4				
Global ID: T060					Well depth from TOC: 25				
Project location: 4550 SPRING HILL RD					Well diameter: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> Other:				
Date: 5/9/06					Product level from TOC:				
Time:					Water level from TOC: 5.07				
Recorded by: Podney					Screened interval: 10.25				
Purge time (duration):					Well elevation (TOC): 113.91				
<b>WEATHER</b>									
Wind: 0-5 mph					Precip. in last 5 days: no				
<b>VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING</b>									
<input checked="" type="checkbox"/> 2" well = 0.17 gal/ft 19.93			<input type="checkbox"/> 6" well = 1.47 gal/ft			Gallons in 1 well volume: 3.38			
<input type="checkbox"/> 4" well = 0.66 gal/ft			<input type="checkbox"/> " well = gal/ft			Total gallons removed: 10.14		Well volumes removed: 3	
<b>CALIBRATION</b>									
Parameter	Time	Calibration	Before Sampling	Time	After Sampling				
EC:									
<b>FIELD MEASUREMENTS</b>									
Time	pH	EC	Temp °F	ORP mV	DO mg/l	Case Volume gal.	Appearance		
	6.86	827.3	62.8	-79	.87	1/ 3.38	Low turbidity		
	6.80	849.3	61.3	-74	.61	2/ 6.77	med odor		
	6.78	898.1	61.6	-72	.71	3/ 10.14	no sheen		
Notes:									
Water level after purging below TOC:					80% of original water level below TOC: Yes				
Water level before sampling below TOC: 5.10									
Appearance of sample:					Time: 12:56				
<input type="checkbox"/> Bailer:	Type:	GPM:	<input type="checkbox"/> Pump: ES-		Type: Submersible		GPM: 1-2		
<input type="checkbox"/> Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse						
Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input checked="" type="checkbox"/> TPHd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input checked="" type="checkbox"/> oxygenates	<input checked="" type="checkbox"/> Lead scavengers	<input type="checkbox"/> VOCs	<input type="checkbox"/> Nitrates	
EPA Method:									
Other:	<input checked="" type="checkbox"/> BROMATE, BROMITE, VANADIUM, SELENIUM, MOLYBDENUM, HEXACHROME								
LABORATORY:	<input checked="" type="checkbox"/> McCampbell Analytical <input type="checkbox"/> Other:								

# FIELD LOG

<input checked="" type="checkbox"/> GROUNDWATER		<input type="checkbox"/> SURFACE WATER		<input type="checkbox"/> DOMESTIC WATER		<input type="checkbox"/> IRRIGATION WATER		<input type="checkbox"/> WELL DEVELOPMENT	
Project No: 0108					Field point name: MW-5				
Global ID: T060					Well depth from TOC: 20				
Project location: 4550 SPRING HILL RD					Well diameter: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> Other:				
Date: 5/8/06					Product level from TOC:				
Time:					Water level from TOC: 4.07				
Recorded by: Rodney					Screened interval: 5-20				
Purge time (duration):					Well elevation (TOC): 108.04				
<b>WEATHER</b>									
Wind: 0-5 mph					Precip. in last 5 days: no				
<b>VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING</b>									
<input checked="" type="checkbox"/> 2" well = 0.17 gal/ft 15.93			<input type="checkbox"/> 6" well = 1.47 gal/ft			Gallons in 1 well volume: 2.70			
<input type="checkbox"/> 4" well = 0.66 gal/ft			<input type="checkbox"/> " well = gal/ft			Total gallons removed: 8.1		Well volumes removed: 3	
<b>CALIBRATION</b>									
Parameter	Time	Calibration	Before Sampling	Time	After Sampling				
EC:									
<b>FIELD MEASUREMENTS</b>									
Time	pH	EC	Temp °F	ORP mV	DO mg/l	Case Volume gal.	Appearance		
	7.69	788.1	6.07	-76	2.37	1/ 2.7	no turbidity		
	7.29	852.8	6.02	-9	.53	2/ 5.4	no odor		
	7.42	928.7	60.2	-14	.39	3/ 8.1	no sheen		
						1			
Notes:									
Water level after purging below TOC:					80% of original water level below TOC: Yes				
Water level before sampling below TOC: 4.09									
Appearance of sample:					Time: 2:28				
<input type="checkbox"/> Bailer:	Type:	GPM:	<input type="checkbox"/> Pump: ES-		Type: Submersible		GPM: 1-2		
<input type="checkbox"/> Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse						
Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input checked="" type="checkbox"/> TPHd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input checked="" type="checkbox"/> oxygenates	<input checked="" type="checkbox"/> Lead scavengers	<input type="checkbox"/> VOCs	<input type="checkbox"/> Nitrates	
EPA Method:									
Other: <input checked="" type="checkbox"/> BROMATE, BROMITE, VANADIUM, SELENIUM, MOLYBDENUM, HEXACHROME									
LABORATORY: <input checked="" type="checkbox"/> McCampbell Analytical <input type="checkbox"/> Other:									

# FIELD LOG

<input checked="" type="checkbox"/> GROUNDWATER		<input type="checkbox"/> SURFACE WATER		<input type="checkbox"/> DOMESTIC WATER		<input type="checkbox"/> IRRIGATION WATER		<input type="checkbox"/> WELL DEVELOPMENT	
Project No: 0108					Field point name: MW-6				
Global ID: T060					Well depth from TOC: 20				
Project location: 4550 SPRING HILL RD					Well diameter: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> Other:				
Date: 5/8/06					Product level from TOC:				
Time:					Water level from TOC: 5.32				
Recorded by: Rodney					Screened interval: 5-20				
Purge time (duration):					Well elevation (TOC):				
<b>WEATHER</b>									
Wind: 0-5 mph					Precip. in last 5 days: no				
<b>VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING</b>									
<input checked="" type="checkbox"/> 2" well = 0.17 gal/ft 14.68			<input type="checkbox"/> 6" well = 1.47 gal/ft			Gallons in 1 well volume: 2.49			
<input type="checkbox"/> 4" well = 0.66 gal/ft			<input type="checkbox"/> " well = gal/ft			Total gallons removed: 7.5		Well volumes removed: 3	
<b>CALIBRATION</b>									
Parameter	Time	Calibration	Before Sampling	Time	After Sampling				
EC:									
<b>FIELD MEASUREMENTS</b>									
Time	pH	EC	Temp °F	ORP mV	DO mg/l	Case Volume gal.	Appearance		
	6.51	1264	64.4	130	.66	1/2.5	Low turbidity		
	6.49	1270	66.4	136	.49	2/ 5	no odor		
	6.45	1262	61.3	140	.53	3/ 7.5	no sheen		
						1			
Notes:									
Water level after purging below TOC:					80% of original water level below TOC: yes				
Water level before sampling below TOC: 5.39									
Appearance of sample:					Time: 0.50				
<input type="checkbox"/> Bailer:	Type:	GPM:	<input type="checkbox"/> Pump: ES-	Type: Submersible	GPM: 1-2				
<input type="checkbox"/> Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse						
Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input checked="" type="checkbox"/> TPHd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input checked="" type="checkbox"/> oxygenates	<input checked="" type="checkbox"/> Lead scavengers	<input type="checkbox"/> VOCs	<input type="checkbox"/> Nitrates	
EPA Method:									
Other: <input checked="" type="checkbox"/> Bromate, Bromite, Vanadium, Selenium, Molybdenum, Hexachrome									
LABORATORY: <input checked="" type="checkbox"/> McCampbell Analytical <input type="checkbox"/> Other:									

# FIELD LOG

<input checked="" type="checkbox"/> GROUNDWATER		<input type="checkbox"/> SURFACE WATER		<input type="checkbox"/> DOMESTIC WATER		<input type="checkbox"/> IRRIGATION WATER		<input type="checkbox"/> WELL DEVELOPMENT	
Project No: 0108					Field point name: MW-7				
Global ID: T060					Well depth from TOC: 21.5				
Project location: 4550 SPRING HILL RD					Well diameter: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> Other:				
Date: 5/8/06					Product level from TOC:				
Time:					Water level from TOC: 5.40				
Recorded by: Rodney					Screened interval: 5-19.5				
Purge time (duration):					Well elevation (TOC):				
<b>WEATHER</b>									
Wind: 0-5 MPH					Precip. in last 5 days: NO				
<b>VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING</b>									
<input checked="" type="checkbox"/> 2" well = 0.17 gal/ft 16.1			<input type="checkbox"/> 6" well = 1.47 gal/ft			Gallons in 1 well volume: 2.73			
<input type="checkbox"/> 4" well = 0.66 gal/ft			<input type="checkbox"/> " well = gal/ft			Total gallons removed: 819		Well volumes removed: 3	
<b>CALIBRATION</b>									
Parameter	Time	Calibration	Before Sampling	Time	After Sampling				
EC:									
<b>FIELD MEASUREMENTS</b>									
Time	pH	EC	Temp °F	ORP mV	DO mg/l	Case Volume gal.	Appearance		
	7.13	1260	62.7	119	1.56	1/ 2.73	con turbidity		
	7.22	1088	61.5	113	3.47	2/ 5.47	no odor		
	7.12	1079	61.0	119	3.73	3/ 8.19	no sheen		
						1			
Notes:									
Water level after purging below TOC:					80% of original water level below TOC: Yes				
Water level before sampling below TOC: 5.45									
Appearance of sample:					Time: 1:15				
<input type="checkbox"/> Bailer:	Type:	GPM:	<input type="checkbox"/> Pump: ES-	Type: Submersible	GPM: 1-2				
<input type="checkbox"/> Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse						
Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input checked="" type="checkbox"/> TPHd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input checked="" type="checkbox"/> oxygenates	<input checked="" type="checkbox"/> Lead scavengers	<input type="checkbox"/> VOCs	<input type="checkbox"/> Nitrates	
EPA Method:									
Other: <input checked="" type="checkbox"/> Bromate, Bromite, Vanadium, Selenium, Molybdenum, Hexachrome									
LABORATORY: <input checked="" type="checkbox"/> McCampbell Analytical <input type="checkbox"/> Other:									

# FIELD LOG

<input checked="" type="checkbox"/> GROUNDWATER		<input type="checkbox"/> SURFACE WATER		<input type="checkbox"/> DOMESTIC WATER		<input type="checkbox"/> IRRIGATION WATER		<input type="checkbox"/> WELL DEVELOPMENT	
Project No: 0108					Field point name: MW-8				
Global ID: T060					Well depth from TOC: 19.5				
Project location: 4550 SPRING HILL RD					Well diameter: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> Other:				
Date: 5/8/06					Product level from TOC:				
Time:					Water level from TOC: 3.84				
Recorded by: Rodney					Screened interval: 5-20				
Purge time (duration):					Well elevation (TOC):				
<b>WEATHER</b>									
Wind: 0-5 mph					Precip. in last 5 days: no				
<b>VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING</b>									
<input checked="" type="checkbox"/> 2" well = 0.17 gal/ft 15.66			<input type="checkbox"/> 6" well = 1.47 gal/ft			Gallons in 1 well volume: 2.66			
<input type="checkbox"/> 4" well = 0.66 gal/ft			<input type="checkbox"/> " well = gal/ft			Total gallons removed: 7.98		Well volumes removed: 3	
<b>CALIBRATION</b>									
Parameter	Time	Calibration	Before Sampling	Time	After Sampling				
EC:									
<b>FIELD MEASUREMENTS</b>									
Time	pH	EC	Temp °F	ORP mV	D O mg/l	Case Volume gal.	Appearance		
	6.33	1399	62.3	63	1.70	1/2.66	Low turbidity		
	6.39	1308	61.1	85	1.00	2/5.32	no odor		
	6.48	1291	60.8	88	.65	3/7.98	no sheen		
						1			
Notes:									
Water level after purging below TOC:					80% of original water level below TOC: yes				
Water level before sampling below TOC: 3.87									
Appearance of sample:					Time: 2:40				
<input type="checkbox"/> Bailer:	Type:	GPM:	<input type="checkbox"/> Pump: ES-		Type: Submersible		GPM: 1-2		
<input type="checkbox"/> Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse						
Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input checked="" type="checkbox"/> TPHd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input checked="" type="checkbox"/> oxygenates	<input checked="" type="checkbox"/> Lead scavengers	<input type="checkbox"/> VOCs	<input type="checkbox"/> Nitrates	
EPA Method:									
Other: <input checked="" type="checkbox"/> BROMATE, BROMITE, VANADIUM, SELENIUM, MOLYBDENUM, HEXACHROME									
LABORATORY: <input checked="" type="checkbox"/> McCampbell Analytical <input type="checkbox"/> Other:									



# FIELD LOG

<input checked="" type="checkbox"/> GROUNDWATER		<input type="checkbox"/> SURFACE WATER		<input type="checkbox"/> DOMESTIC WATER		<input type="checkbox"/> IRRIGATION WATER		<input type="checkbox"/> WELL DEVELOPMENT	
Project No: 0108					Field point name: MW-9				
Global ID: T060					Well depth from TOC: 20				
Project location: 4550 SPRING HILL RD					Well diameter: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> Other:				
Date: 5/8/09					Product level from TOC:				
Time:					Water level from TOC: 4.67				
Recorded by: Rodney					Screened interval: 5-20				
Purge time (duration):					Well elevation (TOC):				
<b>WEATHER</b>									
Wind: 0 - 5 mph					Precip. in last 5 days: no				
<b>VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING</b>									
<input checked="" type="checkbox"/> 2" well = 0.17 gal/ft 15.33			<input type="checkbox"/> 6" well = 1.47 gal/ft			Gallons in 1 well volume: 2.60			
<input type="checkbox"/> 4" well = 0.66 gal/ft			<input type="checkbox"/> " well = gal/ft			Total gallons removed: 7.8		Well volumes removed: 3	
<b>CALIBRATION</b>									
Parameter	Time	Calibration	Before Sampling	Time	After Sampling				
EC:									
<b>FIELD MEASUREMENTS</b>									
Time	pH	EC	Temp °F	ORP mV	DO mg/l	Case Volume gal.	Appearance		
7:31	7.31	2155	61.6	84	1.31	1/2.6	Low turbidity		
7:15	7.15	1893	60.8	64	.31	2/3.2	no odor		
7:20	7.20	1830	61.0	50	.38	3/7.8	no sheen		
						1			
Notes:									
Water level after purging below TOC:					80% of original water level below TOC: Yes				
Water level before sampling below TOC: 4.69									
Appearance of sample:					Time: 4:35				
<input type="checkbox"/> Bailer:	Type:	GPM:	<input type="checkbox"/> Pump: ES-	Type: Submersible	GPM: 1-2				
<input type="checkbox"/> Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse						
Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input checked="" type="checkbox"/> TPHd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input checked="" type="checkbox"/> oxygenates	<input checked="" type="checkbox"/> Lead scavengers	<input type="checkbox"/> VOCs	<input type="checkbox"/> Nitrates	
EPA Method:									
Other: <input checked="" type="checkbox"/> Bromate, Bromite, Vanadium, Selenium, Molybdenum, Hexachrome									
LABORATORY: <input checked="" type="checkbox"/> McCampbell Analytical <input type="checkbox"/> Other:									

# FIELD LOG

<input checked="" type="checkbox"/> GROUNDWATER		<input type="checkbox"/> SURFACE WATER		<input type="checkbox"/> DOMESTIC WATER		<input type="checkbox"/> IRRIGATION WATER		<input type="checkbox"/> WELL DEVELOPMENT	
Project No: 0108					Field point name: Mw-10				
Global ID: T060					Well depth from TOC: 18.5				
Project location: 4550 SPRING HILL RD					Well diameter: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> Other:				
Date: 5/8/06					Product level from TOC:				
Time:					Water level from TOC: 4.20				
Recorded by: Rodney					Screened interval: 5-18.5				
Purge time (duration):					Well elevation (TOC):				
<b>WEATHER</b>									
Wind: 0 - 5 mph					Precip. in last 5 days: no				
<b>VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING</b>									
<input checked="" type="checkbox"/> 2" well = 0.17 gal/ft 14.3			<input type="checkbox"/> 6" well = 1.47 gal/ft			Gallons in 1 well volume: 2.43			
<input type="checkbox"/> 4" well = 0.66 gal/ft			<input type="checkbox"/> " well = gal/ft			Total gallons removed: 8.58		Well volumes removed: 3	
<b>CALIBRATION</b>									
Parameter	Time	Calibration	Before Sampling	Time	After Sampling				
EC:									
<b>FIELD MEASUREMENTS</b>									
Time	pH	EC	Temp °F	ORP mV	D O mg/l	Case Volume gal.	Appearance		
	7.66	816.0	61.2	-124	2.65	1/2.43	Low turbidity		
	7.08	1455	59.0	-67	.69	2/4.86	no odor		
	7.07	1285	59.1	-65	4.98	3/8.58	no sheen		
Notes:									
Water level after purging below TOC:					80% of original water level below TOC: Yes				
Water level before sampling below TOC: 4.25									
Appearance of sample:					Time: 2:00				
<input type="checkbox"/> Bailer:	Type:	GPM:	<input type="checkbox"/> Pump: ES-		Type: Submersible	GPM: 1-2			
<input type="checkbox"/> Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse						
Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input checked="" type="checkbox"/> TPHd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input checked="" type="checkbox"/> oxygenates	<input checked="" type="checkbox"/> Lead scavengers	<input type="checkbox"/> VOCs	<input type="checkbox"/> Nitrates	
EPA Method:									
Other: <input checked="" type="checkbox"/> Bromate, Bromite, Vanadium, Selenium, Molybdenum, Hexachrome									
LABORATORY: <input checked="" type="checkbox"/> McCampbell Analytical <input type="checkbox"/> Other:									

# **Appendix B**

## **Analytical Laboratory Report**

MAY 18 2006

 <b>McC Campbell Analytical, Inc.</b>	110 2nd Avenue South, #D7, Pacheco, CA 94553-5560 Telephone : 925-798-1620 Fax : 925-798-1622 Website: www.mcccampbell.com E-mail: main@mcccampbell.com
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Edd Clark & Associates, Inc.  320 Professional Center Ste. 215  Rohnert Park, CA 94928	Client Project ID: #0108; C+R Ranches	Date Sampled: 05/08/06
		Date Received: 05/09/06
	Client Contact: Rodney Aguilar	Date Reported: 05/16/06
	Client P.O.:	Date Completed: 05/16/06

**WorkOrder: 0605178**

May 16, 2006

Dear Rodney:

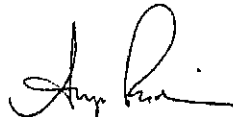
Enclosed are:

- 1). the results of 7 analyzed samples from your #0108; C+R Ranches project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions please contact me. McC Campbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Best regards,



Angela Rydelius, Lab Manager

**McC Campbell Analytical, Inc.**

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
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Website: www.mcccampbell.com E-mail: main@mcccampbell.com

Edd Clark & Associates, Inc.  320 Professional Center Ste. 215  Rohnert Park, CA 94928	Client Project ID: #0108; C+R Ranches	Date Sampled: 05/08/06
		Date Received: 05/09/06
	Client Contact: Rodney Aguilar	Date Extracted: 05/11/06
	Client P.O.:	Date Analyzed: 05/11/06

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\***

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0605178

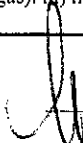
Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-2	W	ND	---	ND	ND	ND	ND	1	88
002A	MW-5	W	ND	---	ND	ND	ND	ND	1	88
003A	MW-6	W	ND	---	ND	ND	ND	ND	1	85
004A	MW-7	W	ND	---	ND	ND	ND	ND	1	91
005A	MW-8	W	ND	---	ND	ND	ND	ND	1	86
006A	MW-9	W	ND	---	ND	ND	ND	ND	1	88
007A	MW-10	W	ND	---	ND	ND	ND	ND	1	81

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

\* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request.

 Angela Rydelius, Lab Manager



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Edd Clark & Associates, Inc.  320 Professional Center Ste. 215  Rohnert Park, CA 94928	Client Project ID: #0108; C+R Ranches	Date Sampled: 05/08/06
		Date Received: 05/09/06
	Client Contact: Rodney Aguilar	Date Extracted: 05/09/06
	Client P.O.:	Date Analyzed: 05/11/06

## Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel\*

Extraction method: SW3510C

Analytical methods: SW8015C

Work Order: 0605178

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0605178-001B	MW-2	W	ND	1	105
0605178-002B	MW-5	W	ND	1	109
0605178-003B	MW-6	W	ND	1	110
0605178-004B	MW-7	W	ND	1	109
0605178-005B	MW-8	W	ND	1	109
0605178-006B	MW-9	W	ND	1	110
0605178-007B	MW-10	W	ND	1	113

Reporting Limit for DF=1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	NA	NA

\* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant; d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range/jet fuel range; l) bunker oil; m) fuel oil; n) standard solvent/mineral spirit.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Edd Clark & Associates, Inc.  320 Professional Center Ste. 215  Rohnert Park, CA 94928	Client Project ID: #0108; C+R Ranches	Date Sampled: 05/08/06
		Date Received: 05/09/06
	Client Contact: Rodney Aguilar	Date Extracted: 05/10/06
	Client P.O.:	Date Analyzed: 05/10/06

**Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0605178

Lab ID	0605178-001C	0605178-002C	0605178-003C	0605178-004C	Reporting Limit for DF =1	
Client ID	MW-2	MW-5	MW-6	MW-7		
Matrix	W	W	W	W		
DF	1	1	1	1		

Compound	Concentration				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND	ND	ND	ND	NA	0.5
t-Butyl alcohol (TBA)	ND	ND	ND	ND	NA	5.0
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND	ND	NA	0.5
Diisopropyl ether (DIPE)	ND	ND	ND	ND	NA	0.5
Ethanol	ND	ND	ND	ND	NA	50
Ethyl tert-butyl ether (ETBE)	ND	ND	ND	ND	NA	0.5
Methanol	ND	ND	ND	ND	NA	500
Methyl-t-butyl ether (MTBE)	ND	1.4	ND	2.0	NA	0.5

**Surrogate Recoveries (%)**

%SS1:	104	106	107	108	
%SS2:	97	96	97	96	
%SS3:	101	100	102	104	
Comments					

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

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Edd Clark & Associates, Inc.  320 Professional Center Ste. 215  Rohnert Park, CA 94928	Client Project ID: #0108; C+R Ranches	Date Sampled: 05/08/06
		Date Received: 05/09/06
	Client Contact: Rodney Aguilar	Date Extracted: 05/10/06
	Client P.O.:	Date Analyzed: 05/10/06

**Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0605178

Lab ID	0605178-005C	0605178-006C	0605178-007C	Reporting Limit for DF =1	
Client ID	MW-8	MW-9	MW-10		
Matrix	W	W	W		
DF	1	1	1		
				S	W

Compound	Concentration				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND	ND	ND		NA	0.5
t-Butyl alcohol (TBA)	ND	ND	ND		NA	5.0
1,2-Dibromoethane (EDB)	ND	ND	ND		NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND		NA	0.5
Diisopropyl ether (DIPE)	ND	ND	ND		NA	0.5
Ethanol	ND	ND	ND		NA	50
Ethyl tert-butyl ether (ETBE)	ND	ND	ND		NA	0.5
Methanol	ND	ND	ND		NA	500
Methyl-t-butyl ether (MTBE)	2.7	0.64	ND		NA	0.5

**Surrogate Recoveries (%)**

%SS1:	107	107	107		
%SS2:	97	96	95		
%SS3:	102	104	104		

**Comments**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.







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Inorganic Anions by IC*		Work Order: 0605178
Analytical methods: E300.1		

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	0.005	mg/L
	S	NA	NA

\* water samples are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in mg/wipe, product/oil/non-aqueous liquid samples in mg/L.

# surrogate diluted out of range or surrogate coelutes with another peak; N/A means surrogate not applicable to this analysis.

h) a lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high inorganic content; k) sample arrived with head space.

DHS Certification No. 1644

Angela Rydelius, Lab Manager



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Rohnert Park, CA 94928

Client Project ID: #0108; C+R Ranches

Client Contact: Rodney Aguilar

Client P.O.:

Date Analyzed: 05/09/06

## Hexachrome by IC\*

Analytical Method: E218.6

Work Order: 0605178

[illegible]

Reporting Limit for DF = 1; ND means not detected at or above the reporting limit	W	0.2 µg/L
	S	NA

\* water samples are reported in  $\mu\text{g/L}$ .

N/A means surrogate not applicable to this analysis; # surrogate diluted out of range or surrogate coelutes with another peak.

h) a lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to matrix interference; p) see attached narrative.

Angela Rydelius, Lab Manager





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## QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0605178

EPA Method: SW8021B/8015Cm			Extraction: SW5030B			BatchID: 21627			Spiked Sample ID: 0605177-007A	
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex) <sup>£</sup>	ND	60	109	107	2.07	106	107	0.982	70 - 130	70 - 130
MTBE	ND	10	94	95.4	1.50	92.6	103	10.4	70 - 130	70 - 130
Benzene	1.9	10	79.6	84.2	4.54	92.7	99.5	7.05	70 - 130	70 - 130
Toluene	ND	10	95.1	103	7.58	90.1	94.6	4.93	70 - 130	70 - 130
Ethylbenzene	2.8	10	77.6	78.5	0.816	99	104	5.23	70 - 130	70 - 130
Xylenes	4.1	30	82.7	83	0.345	91	96.3	5.69	70 - 130	70 - 130
%SS:	107	10	103	102	0.628	101	104	3.32	70 - 130	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

### BATCH 21627 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605178-001A	5/08/06	5/11/06	5/11/06 7:06 AM	0605178-002A	5/08/06	5/11/06	5/11/06 7:39 AM
0605178-003A	5/08/06	5/11/06	5/11/06 9:18 AM	0605178-004A	5/08/06	5/11/06	5/11/06 10:25 AM
0605178-005A	5/08/06	5/11/06	5/11/06 10:59 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



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## QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0605178

EPA Method: SW8021B/8015Cm			Extraction: SW5030B			BatchID: 21641			Spiked Sample ID: 0605183-003A	
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex) £	ND	60	109	100	8.14	102	104	1.93	70 - 130	70 - 130
MTBE	ND	10	95.7	94.4	1.41	96.1	107	10.6	70 - 130	70 - 130
Benzene	ND	10	107	97	9.56	92.6	98.3	5.96	70 - 130	70 - 130
Toluene	ND	10	105	87.5	18.4	88.5	93.7	5.64	70 - 130	70 - 130
Ethylbenzene	ND	10	106	103	2.48	94.8	101	6.55	70 - 130	70 - 130
Xylenes	ND	30	100	96	4.08	90.7	95.3	5.02	70 - 130	70 - 130
%SS:	106	10	101	105	4.17	100	100	0	70 - 130	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

### BATCH 21641 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605178-006A	5/08/06	5/11/06	5/11/06 11:33 AM	0605178-007A	5/08/06	5/11/06	5/11/06 12:07 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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Telephone : 925-798-1620 Fax : 925-798-1622  
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W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0605178

EPA Method: SW8015C		Extraction: SW3510C			BatchID: 21636			Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	N/A	1000	N/A	N/A	N/A	113	113	0	N/A	70 - 130
%SS:	N/A	2500	N/A	N/A	N/A	107	108	0.331	N/A	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

**BATCH 21636 SUMMARY**

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605178-001B	5/08/06	5/09/06	5/11/06 11:14 AM	0605178-002B	5/08/06	5/09/06	5/11/06 12:25 PM
0605178-003B	5/08/06	5/09/06	5/11/06 1:37 PM	0605178-004B	5/08/06	5/09/06	5/11/06 2:50 PM
0605178-005B	5/08/06	5/09/06	5/11/06 10:59 AM	0605178-006B	5/08/06	5/09/06	5/11/06 12:06 PM
0605178-007B	5/08/06	5/09/06	5/11/06 1:13 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

 $\% \text{ Recovery} = 100 * (\text{MS} - \text{Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2).$ 

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

  
QA/QC Officer



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## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0605178

EPA Method: SW8260B		Extraction: SW5030B			BatchID: 21637			Spiked Sample ID: 0605177-005C		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
tert-Amyl methyl ether (TAME)	ND	10	92.7	91.5	1.29	90.3	91.3	1.07	70 - 130	70 - 130
t-Butyl alcohol (TBA)	ND	50	107	93.1	13.7	90	88.9	1.19	70 - 130	70 - 130
1,2-Dibromoethane (EDB)	ND	10	117	117	0	118	118	0	70 - 130	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	103	101	1.85	99.9	100	0.454	70 - 130	70 - 130
Diisopropyl ether (DIPE)	ND	10	108	105	2.40	104	105	0.767	70 - 130	70 - 130
Ethanol	ND	500	105	105	0	105	111	5.74	70 - 130	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	10	93.4	92.3	1.19	91.5	91.8	0.317	70 - 130	70 - 130
Methanol	ND	2500	105	92.5	12.2	95.1	98	3.01	70 - 130	70 - 130
Methyl-t-butyl ether (MTBE)	ND	10	99.9	99.4	0.526	97.1	96.8	0.326	70 - 130	70 - 130
%SS1:	101	10	107	101	5.99	104	104	0	70 - 130	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

### BATCH 21637 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605178-001C	5/08/06	5/10/06	5/10/06 2:27 PM	0605178-002C	5/08/06	5/10/06	5/10/06 6:00 PM
0605178-003C	5/08/06	5/10/06	5/10/06 6:44 PM	0605178-004C	5/08/06	5/10/06	5/10/06 7:27 PM
0605178-005C	5/08/06	5/10/06	5/10/06 9:34 PM	0605178-006C	5/08/06	5/10/06	5/10/06 10:17 PM
0605178-007C	5/08/06	5/10/06	5/10/06 10:59 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.





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## QC SUMMARY REPORT FOR E200.8

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0605178

EPA Method: E200.8		Extraction: E200.8			BatchID: 21624			Spiked Sample ID: 0605204-002B		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
Molybdenum	ND	10	104	106	1.62	100	96.4	4.13	75 - 125	85 - 115
Selenium	ND	10	100	104	3.62	104	101	3.03	75 - 125	85 - 115
Vanadium	2.3	10	102	102	0	95.9	97	1.12	75 - 125	85 - 115
%SS:	108	750	111	115	3.94	112	107	4.18	70 - 130	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

### BATCH 21624 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605178-001D	5/08/06	5/09/06	5/09/06 11:52 PM	0605178-002D	5/08/06	5/09/06	5/10/06 12:10 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

 QA/QC Officer



**McC Campbell Analytical, Inc.**

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
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## QC SUMMARY REPORT FOR E218.6

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0605178

EPA Method: E218.6		Extraction: E218.6			BatchID: 21642			Spiked Sample ID: 0605178-001d		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
Hexachrome	0.92	25	106	105	0.955	99.3	97.1	2.20	90 - 110	90 - 110
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

### BATCH 21642 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605178-001D	5/08/06	5/09/06	5/09/06 9:18 AM	0605178-002D	5/08/06	5/09/06	5/09/06 9:39 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.


% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

 QA/QC Officer



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## QC SUMMARY REPORT FOR E300.1

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0605178

EPA Method: E300.1		Extraction: E300.1			BatchID: 21598			Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/L	mg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
Bromide	N/A	1	N/A	N/A	N/A	106	100	5.24	N/A	85 - 115
%SS:	N/A	0.10	N/A	N/A	N/A	96	97	0.497	N/A	90 - 115
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

### BATCH 21598 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605178-001D	5/08/06	5/09/06	5/10/06 2:33 AM	0605178-002D	5/08/06	5/09/06	5/10/06 3:08 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.


% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

 QA/QC Officer



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Website: www.mcccampbell.com E-mail: main@mcccampbell.com

## QC SUMMARY REPORT FOR E300.1

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0605178

EPA Method: E300.1		Extraction: E300.1			BatchID: 21544			Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/L	mg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
Bromate	N/A	0.040	N/A	N/A	N/A	101	100	0.744	N/A	90 - 115
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

### BATCH 21544 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605178-001D	5/08/06	5/09/06	5/10/06 2:49 PM	0605178-002D	5/08/06	5/09/06	5/10/06 3:38 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.


% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

 QA/QC Officer

# McC Campbell Analytical, Inc.

110 Second Avenue South, #D7  
Pacheco, CA 94553-5560  
(925) 798-1620



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 0605178 ClientID: ECAR EDF: YES

## Report to:

Rodney Aguilar  
Edd Clark & Associates, Inc.  
320 Professional Center Ste. 215  
Rohnert Park, CA 94928

TEL: (707) 792-9500  
FAX: (707) 792-9504  
ProjectNo: #0108; C+R Ranches  
PO:

## Bill to:

Accounts Payable  
Edd Clark & Associates, Inc.  
320 Professional Center Ste. 215  
Rohnert Park, CA 94928

Requested TAT: 5 days

Date Received: 05/09/2006  
Date Printed: 05/09/2006

Sample ID	ClientSampleID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12

0605178-001	MW-2	Water	5/8/06	<input type="checkbox"/>	D	D	D	C	A	D	D	A	B			
0605178-002	MW-5	Water	5/8/06	<input type="checkbox"/>	D	D	D	C	A	D	D		B			
0605178-003	MW-6	Water	5/8/06	<input type="checkbox"/>				C	A				B			
0605178-004	MW-7	Water	5/8/06	<input type="checkbox"/>				C	A				B			
0605178-005	MW-8	Water	5/8/06	<input type="checkbox"/>				C	A				B			
0605178-006	MW-9	Water	5/8/06	<input type="checkbox"/>				C	A				B			
0605178-007	MW-10	Water	5/8/06	<input type="checkbox"/>				C	A				B			

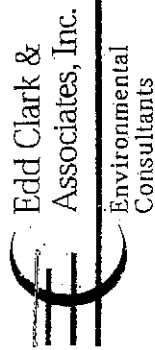
## Test Legend:

1	218_6_W	2	300_1_W	3	300_1SPE_W	4	9-OXYS_W	5	G-MBTX_W
6	METALSMS DISS	7	PRDISSOLVED	8	PREFD REPORT	9	TPH(D)_W	10	
11		12							

Comments: GI# T0609744339

Prepared by: Melissa Valles

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.



Edd Clark &  
Associates, Inc.

Environmental  
Consultants

0005178

# Chain of Custody Report

P.O. Box 3039, Rohnert Park, CA 94927  
Tel: (707) 792-9500 (800) 474-1448 Fax: (707) 792-9504

E-mail in EDF for Upload to Geotracker:  
Yes ☒ No ☐ Initials CJ

Samplers Signature: Rodney Aguilar

EC&A job # 0108		Facility Name & Location: C+R RANCHES 4550 SPRING HILL RD Petaluma CA		Analysis										Remarks				
Global I.D. # T0609744339		Sample ID (depth)		Sample Type		Media		# of Items VAP		Analysis					Remarks			
Field Point Name	Date	Time	Sample ID (depth)	Sample Type	Media	# of Items VAP	TPH	BTEX	7 OX99 ANALYSTS	Pb SCANNERS	TPH	Bromine	Selenium	Vanadium	Molybdenum	Dissolved	Dissolved	HEXA CHROME
MW-2	5/08/06			discrete	W	321		X	X			X	X	X	X	X		
MW-5	5/08/06					321	X	X	X			X	X	X	X	X		
MW-6	5/08/06					321	X	X	X			X	X	X	X	X		
MW-7	5/08/06					321	X	X	X			X	X	X	X	X		
MW-8	5/08/06					321	X	X	X			X	X	X	X	X		
MW-9	5/08/06					321	X	X	X			X	X	X	X	X		
MW-10	5/08/06					321	X	X	X			X	X	X	X	X		

Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Atta Jon Vandenberg	5/19/06	12:00									

Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Relinquished by:	Date:	Time:	Received by:	Date:	Time:

ICE/GOOD CONDITION HEAD SPACE ABSENT DECOLORATED IN LAB	APPROPRIATE CONTAINERS PRESERVED IN LAB	VOAS	O&G	METALS	OTHER

PRESERVATION

MAY 18 2006



**McC Campbell Analytical, Inc.**

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Website: www.mcccampbell.com E-mail: main@mcccampbell.com

Edd Clark & Associates, Inc.  320 Professional Center Ste. 215  Rohnert Park, CA 94928	Client Project ID: #0108; C+R Ranches	Date Sampled: 05/09/06
		Date Received: 05/10/06
	Client Contact: Rodney Aguilar	Date Reported: 05/16/06
	Client P.O.:	Date Completed: 05/16/06

**WorkOrder: 0605207**

May 16, 2006

Dear Rodney:

Enclosed are:

- 1). the results of 2 analyzed samples from your #0108; C+R Ranches project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions please contact me. McC Campbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Best regards,

Angela Rydelius, Lab Manager

Edd Clark & Associates, Inc.

320 Professional Center Ste. 215

Rohnert Park, CA 94928

Client Project ID: #0108; C+R Ranches

Date Sampled: 05/09/06

Date Received: 05/10/06

Client Contact: Rodney Aguilar

Date Extracted: 05/12/06

Client P.O.:

Date Analyzed: 05/12/06

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\***

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0605207

[illegible]

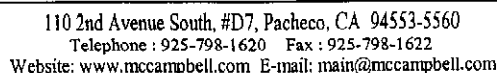
Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

\* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request.





<p align="center"><b>Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel*</b></p>		
Extraction method: SW3510C	Analytical methods: SW8015C	Work Order: 0605207

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	NA	NA

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range/jet fuel range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

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Edd Clark & Associates, Inc.  320 Professional Center Ste. 215  Rohnert Park, CA 94928	Client Project ID: #0108; C+R Ranches	Date Sampled: 05/09/06
		Date Received: 05/10/06
	Client Contact: Rodney Aguilar	Date Extracted: 05/12/06
	Client P.O.:	Date Analyzed: 05/12/06

**Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0605207

Lab ID	0605207-001C	0605207-002C	Reporting Limit for DF = 1	
Client ID	MW-3	MW-4		
Matrix	W	W		
DF	10	10	S	W

Compound	Concentration			ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND<5.0	14		NA	0.5
t-Butyl alcohol (TBA)	ND<50	86		NA	5.0
1,2-Dibromoethane (EDB)	ND<5.0	ND<5.0		NA	0.5
1,2-Dichloroethane (1,2-DCA)	14	20		NA	0.5
Diisopropyl ether (DIPE)	ND<5.0	ND<5.0		NA	0.5
Ethanol	ND<500	ND<500		NA	50
Ethyl tert-butyl ether (ETBE)	ND<5.0	ND<5.0		NA	0.5
Methanol	ND<5000	ND<5000		NA	500
Methyl-t-butyl ether (MTBE)	17	290		NA	0.5

**Surrogate Recoveries (%)**

%SS1:	101	96		
Comments				

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.



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Edd Clark & Associates, Inc.  320 Professional Center Ste. 215  Rohnert Park, CA 94928	Client Project ID: #0108; C+R Ranches	Date Sampled: 05/09/06
		Date Received: 05/10/06
	Client Contact: Rodney Aguilar	Date Extracted: 05/10/06
	Client P.O.:	Date Analyzed: 05/11/06

### Inorganic Anions by IC\*

Analytical methods: E300.1

Work Order: 0605207

[illegible]

Reporting Limit for DF=1; ND means not detected at or above the reporting limit	W	0.1	mg/L
	S	NA	NA

\* water samples are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in mg/wipe, product/oil/non-aqueous liquid samples in mg/L.

# surrogate diluted out of range or surrogate coelutes with another peak; N/A means surrogate not applicable to this analysis.

h) a lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted/raised due to high inorganic content/matrix interference; k) sample arrived with head space.

DHS Certification No. 1644

Angela Rydelius, Lab Manager



Edd Clark & Associates, Inc.  320 Professional Center Ste. 215  Rohnert Park, CA 94928	Client Project ID: #0108; C+R Ranches	Date Sampled: 05/09/06
		Date Received: 05/10/06
	Client Contact: Rodney Aguilar	Date Extracted: 05/10/06
	Client P.O.:	Date Analyzed: 05/10/06

## Hexachrome by IC\*

Analytical Method: E218.6

Work Order: 0605207

[illegible]

Reporting Limit for DF = 1; ND means not detected at or above the reporting limit	W	0.2 µg/L
	S	NA

\* water samples are reported in  $\mu\text{g/L}$ .

N/A means surrogate not applicable to this analysis; # surrogate diluted out of range or surrogate coelutes with another peak.

h) a lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to matrix interference; p) see attached narrative.





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## QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0605207

EPA Method: SW8021B/8015Cm			Extraction: SW5030B			BatchID: 21649			Spiked Sample ID: 0605196-003A	
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex) <sup>£</sup>	ND	60	101	98.9	1.90	106	97.4	8.35	70 - 130	70 - 130
MTBE	ND	10	82.2	84	2.14	98.4	109	10.4	70 - 130	70 - 130
Benzene	ND	10	98.5	99.8	1.36	98.2	94.3	4.06	70 - 130	70 - 130
Toluene	ND	10	97.1	97.5	0.458	94.8	91.6	3.40	70 - 130	70 - 130
Ethylbenzene	ND	10	106	106	0	104	99.6	4.57	70 - 130	70 - 130
Xylenes	ND	30	100	100	0	96	96	0	70 - 130	70 - 130
%SS:	100	10	101	102	0.263	102	102	0	70 - 130	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

### BATCH 21649 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605207-001A	5/09/06 12:30 PM	5/12/06	5/12/06 6:21 AM	0605207-002A	5/09/06 12:50 PM	5/12/06	5/12/06 6:54 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



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Website: www.mccampbell.com E-mail: main@mccampbell.com

## QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0605207

EPA Method: SW8015C		Extraction: SW3510C			BatchID: 21650			Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	N/A	1000	N/A	N/A	N/A	102	118	14.2	N/A	70 - 130
%SS:	N/A	2500	N/A	N/A	N/A	95	107	11.5	N/A	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

### BATCH 21650 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605207-001B	5/09/06 12:30 PM	5/10/06	5/11/06 5:56 PM	0605207-002B	5/09/06 12:50 PM	5/10/06	5/12/06 7:37 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.


% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

 QA/QC Officer





**McC Campbell Analytical, Inc.**

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
Website: www.mccampbell.com E-mail: main@mccampbell.com

## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0605207

EPA Method: SW8260B		Extraction: SW5030B			BatchID: 21655			Spiked Sample ID: 0605203-003A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
tert-Amyl methyl ether (TAME)	ND	10	93.7	101	7.22	96.1	97.8	1.80	70 - 130	70 - 130
t-Butyl alcohol (TBA)	ND	50	96.7	107	10.3	99.1	103	3.68	70 - 130	70 - 130
1,2-Dibromoethane (EDB)	ND	10	119	119	0	120	116	3.61	70 - 130	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	102	111	7.88	106	107	1.56	70 - 130	70 - 130
Diisopropyl ether (DIPE)	ND	10	108	115	6.67	111	111	0	70 - 130	70 - 130
Ethanol	ND	500	109	110	0.359	108	102	5.75	70 - 130	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	10	94	101	7.54	96.3	97.7	1.49	70 - 130	70 - 130
Methanol	ND	2500	99.4	97.4	2.08	92.4	104	11.8	70 - 130	70 - 130
Methyl-t-butyl ether (MTBE)	ND	10	101	110	9.20	104	106	1.98	70 - 130	70 - 130
%SS1:	97	10	102	103	0.772	99	106	6.73	70 - 130	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

### BATCH 21655 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605207-001C	5/09/06 12:30 PM	5/12/06	5/12/06 3:44 AM	0605207-002C	5/09/06 12:50 PM	5/12/06	5/12/06 4:26 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

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## QC SUMMARY REPORT FOR E200.8

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0605207

EPA Method: E200.8		Extraction: E200.8			BatchID: 21624			Spiked Sample ID: 0605204-002B		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
Molybdenum	ND	10	104	106	1.62	100	96.4	4.13	75 - 125	85 - 115
Selenium	ND	10	100	104	3.62	104	101	3.03	75 - 125	85 - 115
Vanadium	2.3	10	102	102	0	95.9	97	1.12	75 - 125	85 - 115
%SS:	108	750	111	115	3.94	112	107	4.18	70 - 130	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

### BATCH 21624 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605207-001E	5/09/06 12:30 PM	5/10/06	5/11/06 1:33 AM	0605207-002E	5/09/06 12:50 PM	5/10/06	5/11/06 2:08 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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## QC SUMMARY REPORT FOR E218.6

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0605207

EPA Method: E218.6		Extraction: E218.6		BatchID: 21642			Spiked Sample ID: 0605178-001d			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
Hexachrome	0.92	25	106	105	0.955	99.3	97.1	2.20	90 - 110	90 - 110
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

### BATCH 21642 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605207-001D	5/09/06 12:30 PM	5/10/06	5/10/06 8:42 PM	0605207-002D	5/09/06 12:50 PM	5/10/06	5/10/06 9:03 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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## QC SUMMARY REPORT FOR E300.1

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0605207

EPA Method: E300.1		Extraction: E300.1			BatchID: 21598			Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/L	mg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
Bromide	N/A	1	N/A	N/A	N/A	106	100	5.24	N/A	85 - 115
%SS:	N/A	0.10	N/A	N/A	N/A	96	97	0.497	N/A	90 - 115
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

### BATCH 21598 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605207-001D	5/09/06 12:30 PM	5/10/06	5/11/06 5:12 PM	0605207-002D	5/09/06 12:50 PM	5/10/06	5/11/06 5:41 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.


% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

 QA/QC Officer



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## QC SUMMARY REPORT FOR E300.1

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0605207

EPA Method: E300.1		Extraction: E300.1			BatchID: 21644			Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/L	mg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
Bromate	N/A	0.040	N/A	N/A	N/A	99.9	102	2.08	N/A	90 - 115
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

### BATCH 21644 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605207-001D	5/09/06 12:30 PM	5/10/06	5/10/06 7:42 PM	0605207-002D	5/09/06 12:50 PM	5/10/06	5/10/06 8:31 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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 QA/QC Officer

# McC Campbell Analytical, Inc.

110 Second Avenue South, #D7  
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(925) 798-1620



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 0605207 ClientID: ECAR EDF: YES

Requested TAT: 5 days

## Report to:

Rodney Aguilar  
Edd Clark & Associates, Inc.  
320 Professional Center Ste. 215  
Rohnert Park, CA 94928

## Bill to:

Accounts Payable  
Edd Clark & Associates, Inc.  
320 Professional Center Ste. 215  
Rohnert Park, CA 94928

TEL: (707) 792-9500  
FAX: (707) 792-9504  
ProjectNo: #0108; C+R Ranches  
PO:

Date Received: 05/10/2006  
Date Printed: 05/10/2006

Requested Tests (See legend below)											
1	2	3	4	5	6	7	8	9	10	11	12

Sample ID	Client/SampleID	Matrix	Collection Date	Hold										
0605207-001	MW-3	Water	5/9/06 12:30:00 PM	<input type="checkbox"/>	D	D	D	D	C	A	E	E	A	B
0605207-002	MW-4	Water	5/9/06 12:50:00 PM	<input type="checkbox"/>	D	D	D	D	C	A	E	E	B	

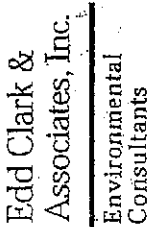
## Test Legend:

1	218_6_W	2	300_1_W	3	300_1SPE_W	4	9-OXYS_W	5	G-MBTX_W
6	METALSMS_DISS	7	PRDISSOLVED	8	PREDF REPORT	9	TPH(D)_W	10	
11		12							

Prepared by: Melissa Valles

## Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.



# Chain of Custody Report

**E-mail in EDF for Upload to Geotracker:**

Initials



P.O. Box 3039, Rohnert Park, CA 94927

**Tel:** (707) 792-9500 **(800) 474-1448** **Fax:** (707) 792-9504

Samplers Signature: Rodney Aguilar

[illegible]